

VOL. I

JULY, 1927

OLD SERIES VOL. XII

# THE PSYCHIA QUARTER

(SUCCESSOR TO THE STATE HOSPITAL

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- The Problem of Mental Hygiene in New York  
The Common Field of Research and Clinical Work  
Some Present-Day Viewpoints  
The Psychoanalytic Treatment of Mental Disease  
Biological Landmarks in the Development of Mental Disease  
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The Relation Between Mental Hygiene and Physical Hygiene  
In Memoriam--Tributes to Dr. J. M. Shaw
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PUBLISHED AT THE STATE HOSPITAL, UTICA, N. Y., BY STATE HOSPITAL

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Annual subscription of Quarterly	-	-	\$2.00
Single copies	-	-	.50
Annual subscription of Supplement	-	-	1.00
Single copies	-	-	.25

Publication Office, Utica State Hospital, Utica, N. Y.

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## THE PROBLEM OF MENTAL HYGIENE IN NEW YORK STATE\*

BY FREDERICK W. PARSONS, M. D.,

COMMISSIONER, DEPARTMENT OF MENTAL HYGIENE

I judge that I shall not have to exert myself to prove to those present that the care of the insane by the State of New York is becoming a real problem. The growth of the hospital population is increasing. The numbers are greater and the rate per 100,000 residents is gradually mounting. In 1900 there were in the hospitals 327 patients for each 100,000 of the State's population. In 1925, the rate had increased from 327 to 416—27 per cent increase in 25 years. The growth of the State has been great for in 1900 there were 22,088 patients in the State hospitals, but at the end of 1925 the hospital population had increased to 43,600. As might be expected, the expenditures for maintenance increased more rapidly for the general living cost rose greatly during the past 25 years. In 1900, the cost of maintaining the hospitals was three and one-half million dollars, but for the year ended June 30, 1925, it took fifteen and one-half million dollars to supply the maintenance needs, and this did not include the cost of extraordinary repairs and betterments. The average annual increase of patients has remained well under 1,000, last year it was 818. This year, however, for the first nine months, the net increase was 1,400 and we look towards an increase in the patient population of approximately 2,000 patients for the fiscal year ending July 1 next. To find 2,000 beds this year is a problem which greatly concerns the Department of Mental Hygiene. Beds are not produced over night and beds cost money.

We may think of a hospital for 2,000 patients as a fairly good-sized institution. In reality it is much below the average in size, but let us say the increase calls for an institution a year. What a collection of institutions we should have if that goes on for a dozen years. This year's increase I have said will be 2,000—only a year ago the increase was less than half that number. What assurance have we that next year there will not be another 100 per cent increase? If we can have in 1926-27 a 100 per cent increase over 1925-26, half of that rate is not an extravagant estimate. The 50

\* Read at meeting of New York State Medical Society at Niagara Falls, May 10, 1927.

per cent ratio of increase continuing until 1931—only four years hence will mean 10,000 additional cases that year and 25,000 more patients during the intervening four years. If we can have without a satisfactory explanation an annual increment in the rate of increase of 100 per cent, we have no reason to say that next year's will not be double this year's. We hope it won't, pray that it won't, and do not seriously expect that it will, but we know of no reason why this year's addition is twice last year's. It is not limited to any one section of the State or any particular type of admission. There has been no period of economic stress which heretofore has raised the admission rate, and no other factors known to contribute to breakdowns in the unstable. The institutional death and discharge rate has been the average. The admissions, however, have been abnormally high and there is no satisfactory explanation for it.

It is very difficult to get money to provide beds for this great increase in the hospital population. It is not as though we had beds awaiting occupants or that we had hospitals only normally populated and that additional beds easily could be put in. Before we begin to care for this number we have hospitals overcrowded by 30 per cent. That is average overcrowding throughout the State; in localities which have grown faster than the hospital, we have 50 per cent overcrowding.

The State has earnestly tried to reduce this overcrowding and four years ago the people gave \$50,000,000, about two-thirds of which was to be and is being allotted to the needs of the insane. It was hoped that this large sum would remove the overcrowding then calling so loudly for relief and provide accommodations for a few years to come. We have had this share of the fifty million dollars to be spent over a four-year period and the last has been apportioned. We have just begun to show more beds and this calendar year will have nearly 3,000 as an addition to the certified capacity of the institutions 750 of which will be in institutions for the feeble-minded. That will be a gain but before the fifty million is spent, and a sum so large cannot quickly be expended intelligently and wisely, we do not think we will be any better off with respect to overcrowding than we were before the bond money was voted. Obviously the State is never going to progress at this rate. Other ways must be found of controlling the admissions,



cheaper construction methods must be devised, that is more beds obtained for the money expended, or more money be made available.

The first suggestion is best, the second is good, but less desirable and the third is the least desirable solution. Let us consider first the third proposition, the least desirable. The Legislature willingly gives the Department money. It has to be shown, however, that the money is needed and it can give only what it has. The Department cannot always be considered the favorite child and have first claim on funds. The Governor has proposed that there be submitted to the people the question of allowing the Legislature to authorize as needed bonds for hospitals—a blanket authority to bond the State for that one need. He believes the people would so authorize the Legislature if it were clearly shown that the need existed and that the funds so raised could only be devoted to the care of the insane. The people want the hospitals to continue on the present high plane, even though the good reputation which they bear attracts patients and makes the burden greater.

Secondly, cheaper construction methods. It costs approximately \$4,000 to supply a patient's bed. That seems high for only few families of five live in a \$20,000 house. But our buildings have to be strong and fire-proof. Great numbers have to be housed and even allowing 50 square feet for day space and the same for sleeping the buildings assume large forms. To get light and air the buildings have to be separated one from the other and that means expensive underground connections for steam, water and electricity and there are connecting roads. Then there are the treatment facilities, the kitchens, the laundry, the boiler house, the quarters for employees and officers, the shops, the office spaces, all to be provided out of the so much per bed. It is difficult to see where construction costs can be greatly reduced. The buildings built within the last decade are plain, unornamented, useful, business-like structures and yet they cost too much money. Mr. Sullivan Jones, the State Architect, has experimented with a poured building and found it so satisfactory after testing a trial structure, that he has planned the new Rockland Hospital to be so constructed. Last week, the Department of Mental Hygiene let contracts for five million dollars' worth of this work at Rockland, somewhat less than one-half of the completed hospital and the State has saved over a million dollars on this twelve million dollar project. More

must yet be done in the direction of cheaper building before we can feel that construction costs are where they should be. There is no profit, however, in cheap construction which will need much upkeep. Shacks do not pay. We are now occupying a structure built by the Navy to house sick sailors built for the emergency and only calculated to last for the duration of the war. Soon it will have to be evacuated. It will fall down and the repairs make it a building too expensive to maintain.

I do not see how we are going to limit admissions. We have to take the cases which develop. We cannot refuse them for the State reserves to itself the public care of the mentally sick and controls the private care. We are, of course, penalized by having institutions of a high type. If we had madhouses of one hundred years ago we would be called upon to take only those so dangerous that extra-institutional care was quite impossible and we would treat them so badly that the period of hospital residence would be short. We do not operate on that basis. We attract, almost invite admissions and with clinics reach out and get patients, then take good care of them and they live long. No method of controlling admissions, acceptable to the people, exists. Something equally effective, speeding the departure by cure or improvement, might be and is used as a substitute. This we do. Most hospitals have a very liberal policy so far as the discharge of unrecovered patients is concerned and with social service, places can be found for many after the storm has passed and the individual has settled down into a fairly comfortable though unrecovered state.

The most engaging aspect comes last, viz., prevention. It is in that direction our main effort should be directed. We have the will but lack the way. A clear cut road sure of results and those speedily evident, remains to be found. In the light of our present knowledge, we are not justified in expecting to find simple means which will permit our curing in a short time and in a wholesale manner the patients whom now we regard as having unrecoverable forms of mental disorder. It may come some day but not until much preliminary investigating has been done and new methods have been developed. Are we doing all that we should in that direction? It is true many devoted men are working in laboratories and with living patients, studying, testing, learning and I believe making some progress but more could be done. The State could

profitably establish a research center and spend generously in this direction or better still, the Federal Government might undertake the work. Much is spent by the United States for research in plant and animal diseases but nothing in the direction in which we are most interested. I am now referring to real research by trained research workers and largely of no special psychiatric training. They would have no preconceived notions and might apply methods successful in other fields. We need pure scientific research and need it badly.

There is plenty of room for independent investigations where men can follow promising lines. Let those who think that work with the individual helps go their way. Let those who believe that the correction of faulty childhood habits insures against adult shipwreck follow that line and those who think the application of eugenic principles will give relief go theirs. All those ways are good but not good enough. The world wants and needs the best. I do not think it is getting it even though we do what we can. The people are awakened to the principle of prevention. They will demand that we do more than we are now doing and we ought not to wait for that demand. For a real solution to the problem of the State care of the insane our hope lies in prevention and improved methods of curing the unpreventable cases.

## THE COMMON FIELD OF RESEARCH AND CLINICAL PSYCHIATRY\*

BY HARRY STACK SULLIVAN, M. D.,

DIRECTOR OF CLINICAL RESEARCH, THE SHEPPARD AND ENOCH PRATT HOSPITAL, BALTIMORE

Psychiatry is one of the group of useful arts. As such, its origin antedates that of science by several centuries. One need not discuss the history of medical evolution from magic and more primitive religious thought and behavior. It can be accepted, it seems, that the empirical psychiatry of today includes ever more finely rationalized magical notions, excepting only that part based either on scientific discoveries or on the intuitive knowledge of the practitioner. As to this last mentioned *intuitive knowledge* one might justifiably inquire as to how it is different from magical notions. This inquiry would entail discussion of the entire field of subconscious and nonconscious mental processes, and so would include the whole of mental affairs with which psychiatry is particularly concerned. Suffice it, therefore, at this juncture, if we attend only to the scientific groundwork of our art.

Even in demarkating here that which is scientific, one encounters discouraging situations. As Bernard Hart has expressed it: "Psychology has clearly established its right to deal with the phenomena of human behavior, and to formulate psychological concepts which will serve to explain those phenomena, provided that they are constructed according to the rule of scientific method. It has to be recognized that psychology is at a disadvantage in that its method is of a character which presents inherent difficulties to the complete satisfaction of those rules, and this disadvantage is equally apparent in the section of psychology constituted by psychopathology." He continues, "Nevertheless, many of the simpler conceptions of psychopathology, such as dissociation, fail to satisfy the canons of science by so small a margin that it can safely be neglected."<sup>1</sup>

Dissociation, suggestion, conflict, adjustment and maladjustment, are the conceptions to which Hart would refer as fully scientific.

\* The basis of an address before the Neurone Club at its meeting in Rochester, New York, January 22, 1927.

1. "The Development of Psychopathology as a Branch of Science," published in "Problems of Personality," New York, Harcourt, Brace & Company, 1925; pp. 231-241.

The conceptions of the defense reactions, compensation, sublimation, and regression, may well be added to that list. Beyond these we can scarcely claim full scientific justification.

Many of the other conceptions which Freud and other psychoanalysts have produced cannot be regarded as true scientific hypotheses, regardless of their utility in the treatment work of their originators and analysts at large. Utility of a conception may be said to hinge on its providing a ground for successful prediction of events, and for the construction of crucial experiments. Its plausibility of application to facts of observation already at hand is not a scientific sanction if the hypothesis cannot be *tested*. The therapeutic "test" is no test at all; witness, chiropractic and Eddyism.

Without extended digression on the cause of this peculiar dearth of scientific formulations, I wish to emphasize certain factors, widely recognized but not very much studied. First of all, one must look to the notion of demoniac possession, until fairly recently an accepted explanation of mental disorders, and still a potent magical notion among the body of citizens. Not that there are many Americans today who will admit or recognize that they believe in evil spirits—certainly not as interlopers into the human body, with mental disorder as a result. Study the reaction of most laymen to the mental patient, before dismissing the devil-notion, however. The ancient horror of leprosy is not so exaggerated an analogy to this aversion of the "normal" for the "insane." Their remarks often suggest a notion that the miasm or evil spirit might readily extend to the psychiatrist; their remarks as to the "depressing effect" which such patients have on them require more than naive acceptance if they are to be understood.

The obverse of the devil-doctrine—which you recognize as the antitheses God-Satan, angels-devils, good-evil—is the old doctrine of mind and body. The demented have lost their "mind," if not by dispossession by an evil spirit, at least by some strange machination which is formulated in the likeness of other magic. This is a glaring instance of magical thinking; the more enlightened do not tolerate it. No, indeed. They show the same superstition, however, in their anxiety to *eliminate* "mind." They are the laymen who relate Johnnie's psychosis to a bump on the head, and the psychiatrists who write of psychology as a division of "brain physi-



ology." Materialistic twaddle, and the succeeding mechanistic explanations are energized by the same old magical idea of anti-thetic mind and body, plus cultural accretions in the shape of "dis-belief" in dualism, the whole ensuing as monism.

It shows again as the feeling of natural scientists either that psychology and psychopathology are entirely metaphysics, or that they are realms of investigation in which the usual methods of science are unavailing, and mystical, esoteric methods required. In the one case we see the Behaviorism of Watson and his less regenerated followers; in the other, the raconteur and spook-research varieties of alleged psychology. These factors operate unfortunately to provide the community background for psychiatrists.

Even more unfortunately, however, is the situation of many psychiatrists, themselves. Either they are "physicians of the soul" lamentably detached from biological viewpoints, or they are "hell on focal infections" or "cortical degenerations" or "endocrin failures," etc. It is perhaps observation of these extreme attitudes added to their conventional superstition which lead some medical men to say that "the psychiatrist is an internist who failed," instead of realizing that the good internist is also a successful psychiatrist.

When these false attitudes of the silent majority, the more enlightened, and the medical profession at large, enter into the dissemination of educative propaganda, the giving of research funds, and the creation of medical curricula, the unenviable state of psychiatry is accentuated. With open support of popular prejudice, superstition and shame of mental illness; with millions pouring into cancer research, tuberculosis control, investigation of yellow fever, etc., even into research on racial, social, and industrial psychologies, with perhaps a cent for general and abnormal psychology; and with the psychiatric teaching staffs spending their semi-occasional hours in futile effort to overcome the blindness of the students—native and acquired from the rest of the faculty; needless to say, progress of the art of psychiatry is uncertain, and healthy expansion of its scientific foundations a comparatively rare phenomenon.

That the State of New York, of Massachusetts, and a few others have been led to accepting the far-sighted policy of furthering psychiatric research is the most promising effort toward the rem-



edy of these situations. That a few institutes have been endowed for psychopathological research is exceedingly gratifying, the more in view of the widespread aversion of the wealthy to the association of their names with anything pertaining to mental disorder.

With this overlong peroration, I return to my topic, which may be reduced to the proposition of making the best of what we have. In other words, let us consider what the specialist in psychiatry—in his moments of leisure from administrative and quasi-satisfying professional duties—may accomplish as a research worker.

Perhaps another series of quotations will facilitate the presentation of the gloomy side of this matter. Knight Dunlap, the eminent experimental psychologist, has written: "In planning an investigation the most frequent mistake into which experimenters fall is in making the scope of the problem too wide, to include too many problems. . . . [Not] all the scattering of labor that comes under this category can be attributed to youth either of the investigator or of the topic. In some cases, the scattering is due to lack of grasp on the real problems involved. Without a sufficient grasp the fundamental small problems which ought to be attacked cannot be determined with clearness. . . . [Also] the lengthy and copious working out of a simple small point is extremely tedious, and nobody likes tedious work. The covering of a large topic superficially is much more thrilling."<sup>2</sup>

In this quotation, is expressed the most regrettable truth concerning much would-be research in psychiatry. Large topics are covered most superficially and thrilling "discoveries" and reports produced. All to no end, so far as permanent improvement of the art of psychiatry is concerned. So huge a field as that of the schizophrenic is charged across by our enthusiasts, and "retreat into narcissism," "regression to archaic unconscious," "dilapidation of the gonads," "disorder of the basal ganglia," or what not of "bushwa" is "discovered" as etiology. After the discovery, the enthusiast sees *nothing but* evidence of his correctness, from thenceforth. His disciples rediscover and rediscover his genius; they amass "evidence" in support of his theory. But if you sift the whole business you find that there is nothing. You must begin all over from the beginning. The most elementary canon of science has been ignored; his data are wholly subjective or so tainted with

2. "The Experimental Method of Psychology" in "The Psychologies of 1925," published by Clark University, 1926.

his preconceptions as to be useless. Behind this situation, all the fundamental questions which bear on his data have been ignored or begged. In fact, in general, you have little or no real investigation; merely an occasional uncontrolled observation here and there as cornerstones for huge arches of speculation. In the "archaic unconsciousness" business, many of the cornerstones are "facts" deduced not by psychiatrists but by dilettantes who culled them in the library from the garbled accounts of untrained and prejudiced missionaries who had about the same contact with primitive culture that the writer has with equine conceptualization, who had less scientific training than the average elevator boy. Poets and literati have been another fruitful source of psychiatric "corner-stones."

Another great nuisance, may, prime evil, of psychiatric research is unwarranted generalization, in the more restricted sense of passing from a few particular instances to universals. This has been a peculiar difficulty of psychology and is the most vulnerable weakness of psychoanalytic doctrines. Once a proposition has been universalized, the observation of negative instances dies a natural death. The most tenuous generalization seems a perfectly sound buttress for any theorizing. Because of our native reasoning ability, relations spring up, correlates are taken for granted, new and ever extending propositions grow like fungal hyphae, and we have a plausible "system," every ready, like the astronomy of Ptolemy, to receive a new crank to "explain" a stubborn fact which intrudes itself.

Observation is the touch-stone of psychiatric research. Pure research would preferably be observation under rigid and carefully arranged conditions susceptible of ready duplication by another. Such situations are for several reasons impossible in the field of psychiatry. No human subject is ever quite the same on a series of occasions. No schizophrenic is apt to respond in even approximately similar a way to a series of observers. The setting of observational situations is a task requiring rather uncommon gifts on the part of the observer, not to mention rather unusual facilities for his work.

Surpassing these great difficulties is another inhering in the nature of the subject matter, human behavior and thought. Experiential report, the subject's statement of "what went on inside," of what he thought, felt, wished, intended, etc., this is a vital part of

observation in psychology and psychopathology. This is not only subject to direct complications and interferences, but introduces a great variable in the shape of the linguistic factor.

Speech while less important as a means of concealing thought than our efforts at anamneses might suggest to us, is a ticklish channel for scientific data. Words cannot be conceived as having inherent, "objective" meaning. There is no word in common use which can always be depended on to "mean" what it means to you when you use it. The degree of intrasocietal variation of certain relatively common nouns and a lesser number of verbs, adjectives, etc., may be sufficiently small to permit of ready exchange of intelligence about "external" situations. Even in reporting subjective situations, be they relatively unimportant and comparatively unemotional, common words may be accepted as data in psychological experiment. *But for reporting subjective situations important to the self-esteem, self-respect, etc., of the subject, or situations for other reason definitely tinged with emotion, verbal reports are but mediately available as scientific data.* There must be rather elaborate contexts which include not only the verbal report, but, if possible, also extensive data about the situation and state of the subject, his relations (real and fancied) to the observer, and otherwise. This is the problem of all problems peculiar to psychopathology; the observations necessarily must carry with them a broad context if they are to be relied on for scientific purposes.

Finally there is a factor of general biological research which enters most importantly into psychopathological studies. A fundamental characteristic of the living is found in the effect of previous experience, the mnemonic function. Mental disorder and the individual phenomena of mental disorder have as an essential, contributions from certain past experience. It is necessary, for understanding a phenomenon, that we have not only our objective observations and the subject's reported experience at the time, but also as complete as possible a *genetic background*, the cogent material of the subject's life-experience *as experienced*; i. e., what he actually lived or underwent, not what he is alleged to have experienced. Free-associational investigation is intended to correct and expand data ordinarily secured in history taking. If it is to accomplish this purpose, it must be entirely autogenous, not a reproduction of suggestions, gratuitous interpretations, etc., from another.

In the end, the genetic data must be arranged accurately in time, so that it represents the true life-series, not a fictitious or confused string of incidents.

Perhaps these brief references suffice to preface a statement that the common field of research and clinical psychiatry is found in the observation of patients. Lacking an enlightened social backing which would permit the arranging of several crucial experiments, research psychopathology must depend for its greatest aid on ever more nearly perfect observation of human behavior and thought. This is imperative upon it; it can choose nothing else. As to clinical psychiatry, however, there is no such imperative. Clinical psychiatry can be, and in some cases is, most slipshod. The psychiatrist may entertain himself with ribald fancies, he may preoccupy himself with most unscientific theories, he may—and, curse the luck, he too frequently does—tread clumsily upon the delicate balance between accessibility and inaccessibility, between relatively observable and relatively opaque states in patients who show most important phenomena.

In fine, the clinical psychiatrist has a choice of almost any conceivable position between an extreme of exquisite scientific rigor of observation, and one of blissful meandering through the day's alleged work, with results of no therapeutic importance to the patient or scientific importance to anyone. With the schizophrenic, he may seem anything from the personification of an all-wise impersonal Deity who in some way causes light to shine in the darkness, to an indifferent or even a malignant judge who seals the verdict of society—failure, hopeless, despised, damned.

What can psychopathology suggest as a program for clinical psychiatry? Firstly, one may venture a statement that scientific research can be and often is a thoroughly effective therapeutic tool. Leaving out of consideration the crucial tests which are of but indirect concern to the clinician, we reemphasize that observation is the touch-stone of psychopathology. But on the other hand, observation in the sense above discussed puts us in a preeminently satisfactory position as to *understanding the patient, his manifestations, and his purposes*. I can conceive no more necessary factor in successful psychotherapy. I admit freely that there are situations in numbers in which a measure of understanding on the part of the physician cannot be communicated in any direct fashion to the

patient. If we come to understand more in these cases, perhaps the limitation of communicability will disappear. Whatever may be the case, the patient is apt to be benefited by the incommunicable understanding of the physician. Sympathy phenomena are of great importance in these cases. In fact, the more one understands, the more he will find accessible, as a rule. And we all know of "social recoveries" which we have assisted without any real exchange of information; with affection of the discharged patient as a sign that we are not succumbing to wish-fulfilling fantasy.

May I take the liberty of discussing a pitfall in this understanding of the patient. That it is one of my own difficulties will perhaps negative an appearance of preaching. The personality of the observer must either be exterior to the scientific observations which he secures or be represented explicitly in their context when it enters into them. Now, there are numerous instances among my acquaintances in which observational situations in regard of schizophrenics have been reported and interpreted in fashions widely at variance with fact. Our lay assistants, nurses and attendants, and our lay quasi informants—relatives and friends of the patient—these groups show the reaction under discussion most clearly. Emotional situations, sentiments elaborated in regard of the patient, exercise a powerful influence on what is perceived, and on interpretations, retrograde amnesias, and pseudo-recollections concerning what actually transpired before the observer. Even more unquestionably, however, does the sentiment of self of the observer play tricks on his reliability. There is no one among you who does not appreciate the dubious character of reports arising from situations in which the observer knows that he has been guilty of fault or shortcoming. A fact the existence of which stirs a feeling of shame, is a fact prone to much garbling in the report. Surely this needs no special stressing in this presentation. But how curiously opaque we are to our own observational scotomata. How rarely easy it is to overlook things which do not fit into our tentative explanation. How more than difficult it is to see evidence of an unpleasant theory. It is sad indeed that medical men are so human as to find theories pleasant and unpleasant. No scientist but should blush at an accusation that he liked or disliked an hypothesis, on the basis of ethics or aesthetics, or—and this is the important ground—on the basis of his own early training. Convicted of such an accu-



sation, he is adjudged no scientist, but a bigoted layman thrusting his likes and dislikes into the serious business of observation, the method of knowledge.

The effect of personal warp, however, is much more insidious than mere overlooking of negative instances and resistance to disturbing theories. It seems to be the principal factor in the production of a number of our current theories. For examples, one might point to the quaint notion of MacCurdy, G. V. Hamilton, and others, the gist of which is to the effect that emotional reactions are abnormal, or to McDougall's theory of schizophrenia which makes it a development of stubbornness, or the old notion of the psychoanalysts which makes it a narcissistic neurosis—thereby justifying failure of easy-going therapeutic approaches. Even better illustrations may be culled from the psychoanalytic literature, probably because the psychoanalytic theory formulations include a good deal that is repugnant to the puritanical. That certain of the most important investigators in psychoanalysis reach divergent results from contact with supposedly identical or homologous facts is one manifestation. That certain individuals amongst them move the accent of importance to this or to that "mechanism," as for example Ernest Jones with anal erotism, Coriat with urethral erotism, Rank with the birth trauma, Adler with the masculine protest, seems to reflect more than a little of personal warp. There seems at times to be a considerably over-determined attitude toward these individuated factors; the writer's work on the ramifications of the oral zone in personality genesis is readily accepted by these investigators as a similar "all-embracing idea." Surely it is not the method of science to see everywhere manifestations of one particular theoretic prepossession especially when much that is thus seen as proof is identical with that which another proponent identifies as proof of his notion.

The greater difficulties which one encounters in the conversion of clinical work to psychopathological ends have now been mentioned. Perhaps an illustration may be offered from a recent interview with a patient to show how these combine to vitiate valuable work in the writer's service. We have elaborated a working hypothesis of schizophrenia which relates it closely to the phenomena and situations which go to make up sleep. As mentioned in "Peculiarity of Thought in Schizophrenia," and elsewhere, there seems to be



very little in schizophrenic phenomena observed in the incipient and catatonic varieties at least which are not paralleled by sleep and dreams. Having worked out this tentative hypothesis, our research service is naturally on the *qui vive* for data which sustains the hypothesis and, I hope, for data which will indicate its limitation and the need for revision. In an interview with an incipient schizophrenic who is showing an ominous tendency to develop hebephrenic maladjustment, the following took place: " \* \* \* (You tell me a lot of things; then you say it isn't so). "I say, that is what I think I am going to be doing. I haven't been here but 10 days. Great Day!—When I talk to these other people they have been here months and months. I can't expect to do that right now—and I am not doing it." (What are the things you don't understand about it?). "Nothing. Understand about what?" (The situation in which you are.) "I think I have clarified it." (Alright, what was there to clarify?) "You said I was in a dream—you said it was sort of mysterious." (When did I say anything was mysterious?) "I probably said it—I don't know—I said I was in a dream and I have been talking to try to explain to you what I meant by that." (I don't understand that and I wish you would explain.) "Good God—I have been talking about that ever since I have been here." \* \* \* (Try to tell me what you mean by being in a dream.) "That sort of a—I think my ideas to me—how to spend the time and everything like that. I explained to you about feeling sort of—when I jiggled a little—light and springy—I think that's what—but come right down right now—I think I feel fine. I think I am perfectly clear about it. That was another man's idea. May be his interpretation and you and Dr. Sx.—maybe all could explain that sort of thing—it sounded darn good to me—anything that's particularly impressive, that comes back to a person—that did come back to me and was exemplary of my opinion of how I felt since I have been here." (I am trying to find out what you base it on.) "I base it on being—feeling in such shape—of more good—base my whole ambitions and hopes just on getting better. \* \* \*." This extract from 35 pages of verbatim, representing three interviews, is a classical instance of defeat which one sustains through lack of scientific critique on the part of the best-intentioned assistants. The recollection of the examining physicians in this case does not impress one as complete enough to be

certain that one of them was not carried by his enthusiasm into supplying this interpretation to the patient. While certain of our colleagues have a convenient theory that interpretations which are accepted by a patient are to the extent accepted, true of the patient, this notion is more delightful than scientific. The reproduction of an interpretation by a patient showing positive suggestibility may be one hundred per cent in the case of any interpretation which has not come into direct conflict with a powerful motivation of the patient. Perhaps a reference to the ease with which the hypnotic subject is convinced that he can mimic a squirrel or a turtle, illustrates this better than would extended quotations of interviews with schizophrenics.

The clinical psychiatrist who asks leading questions produces a record which is very difficult indeed to transfer to the purposes of psychopathological research. It is much better, if one cannot take the time or make the effort to get information without offering an answer, that his questions shall be misleading. As a matter of fact in the hasty examination before a hospital conference, the nearest approach to scientific investigation has frequently to be to a considerable extent misleading questions. The ideal interview is one in which the physician offers only the orienting questions to cover the most recent activities of the patient, mention of the particular topics on which he desires the patient to talk, and such provocative interjections as "And—," "And then," "Continue," "Which seems to mean what," and the like. With comparatively inaccessible schizophrenics it is often possible to obtain two or three thousand words in an hour without supplying the patient with anything of "explanation" or "interpretation." In favorable cases it has been possible to secure about as complete a record as that secured by the psychoanalysis of a psychoneurotic from quite paranoid schizophrenics without offering them any interpretation or explanation whatsoever. Needless to say, the impression had been given in these cases that frank discussion would do no harm and would probably accomplish much good. It seems scarcely necessary to invite your attention to the fact that frank discussion does do good by bringing the genetic background and the subconscious motivation of the patient's peculiar thoughts and behavior into the region of his logical consideration and volition.

The problems of research which seem to have important clinical

implications are remarkably numerous. A good many of these can receive material aid toward solution from efforts primarily directed to the assistance of patients. The addition of scientific critique—a close attention to what can be seen and heard from the patient and about the patient with careful avoidance of premature interpretations and explanations—increases the difficulty of psychotherapy, but also increases the probability of success. No patient is harmed by an effort on the part of the physician to know what he is really driving at and to understand comprehensively what the patient believes or suspects. It is true that the ontogenetic psychology needs studies of the intrauterine state from the neurological, the stimulus and response, the visceral neurological, and the dynamic-symbolic aspects. We are badly handicapped by our ignorance of the neonatal and infantile periods of personality genesis. Our child psychology and our juvenile psychology are far from coherent because of the lack of knowledge of infantile psychology. Several very large topics and a wealth of small points need to be worked out. For instance, we know very little as to the actual *attitude* of individual parents for individual children. We know very little as to the mental state and attitude of individual teachers to individual pupils. We have only a beginning of data on nursery, kindergarten, and school group life. We know woefully little as to the actual facts concerning high school society, *per se*, and in its relation to the adolescent resymbolization. In spite of the long time during which we have been rather intensely interested in adolescence as an epoch of personality genesis, and the great number of individuals who have addressed themselves to this topic, our information is meagre and much of the work will have to be repeated on the basis of more thoroughgoing study of the pre-adolescent periods. The psychology of college entrants is but now engaging us. The psychology of the grammar school juvenile on entering the world of employment has not concerned any scientist of note. The adolescent developments in this latter group is still an uncharted realm for psychology and psychopathology.

We believe that the schizophrenic disorders are restricted in their occurrence to individuals who have never if but for a brief period effected a thoroughly satisfying adjustment to a sex object. This hypothesis is of enormous scope; it is not only a purely tenta-

tive proposition but it is one the demonstration of which requires a vast amount of tributary work in all the fields which I have so far enumerated. Besides them it must receive contributions from all other divisions of psychopathological research; from the scientific study of such topics as symbol dynamics *in utero*—a subject which can be approached only indirectly through delicate psycho-physical research—, a number of exact psycho-physical studies of the new-born and the growing infant (so limited a thing as exact photographic studies of the postural changes from birth will give an important assistance to both psychopathology and neurology), a wealth of real data rather than suppositions about the pleasure sources of the infant, child and juvenile, a wealth of data about the subjects which have in particular been the preoccupation of the psychoanalysts, an understanding of speech and graphic procedures from the genetic side, an understanding of the evolution of logical thinking, knowledge of the growth and vicissitudes of self-consciousness, the evolution of personal fictions, and many many others.

For the understanding of schizophrenia, in addition to all the great fields of investigation which have been indicated above, it seems as if we must make some real research into the nature and dynamics of sleep. The present status of this field of study is that of entirely unexplored territory. Nothing of any real moment has been contributed throughout the years that an occasional worker has turned to this vast subject. Of all the aching voids we find in psychology there is not one which remotely approximates the omissions on the subject of sleep. One can go so far as to say that the first work which approximated scientific character in this connection is the work of Pavlov and his followers in connection with sleep as an outcome of general inhibition. Without taking time to discuss the breadth of utility of this conception, let me point out to you the rather paradoxical fact that from the genetic standpoint sleep is the normal state of living organisms and that wakefulness begins as an occasional disturbance of sleep originated by the activity of chemical needs, cravings, etc., which have arisen within the sleeping organism. Theories of dreams can scarcely be valid when we lack any real insight into the distinctive character of the state in which dreams occur. So-called theories of "symbolism" can scarcely concern us as other than rather far-fetched speculations

until we know more about the dynamics of sleep and dreams. So typically "wakeful" a thing as motivation has important ramifications in sleep, in which the writer has been able to discover abortive behavior reminiscent of the more profound motivations of waking life and also reminiscent of the "inexplicable" motor performances of catatonics.

Again from the ontogenetic standpoint we have to know something of the effect upon personality genesis of experience characterized by over-stimulation, if not exclusive stimulation, of each of the primary "emotional tendencies." At present we have data which are but barely suggestive as to the ultimate importance of the over-activity of fear responses and rage responses from the neonatal period onward. The data which we have as to the ultimate evolution of personalities in which over-emphasis has attached to the "satisfaction responses" are largely fantastic. If now you will consider the complicated picture of the individual who from infancy onward for some time has shown comparative freedom from markedly emotional responses in the waking life, but has suffered from panic dreams, fear dreams, or anxiety attacks during the night, you may envisage the breadth of research in this connection.

The ontogenesis of stable maladjustments of the type roughly classified as psychopathic personalities, their fate and the dynamics of experience which lead to the various developments in these patients—schizophrenic or otherwise—is another great topic.

The nature and manifestation of the warped personalities which leave us as social recoveries following psychoses is a tributary to this field. The understanding of chronic and periodic alcoholism, drug addiction, and the huge field of sexual peculiarities, ties in with all these problems.

Another research problem which has the widest ramification in psychopathology, is that which pertains to the growth and vicissitudes of self-esteem in its widest and narrowest connotations. It has seemed that the pre-schizophrenic is all but characterized by unusual difficulty in the evolution of this sentiment, so that he comes to think of himself as peculiarly inadequate or definitely abnormal. A good deal has been contributed which tends to demonstrate that this situation is due to homosexuality which in turn is related to earlier influences to which the individual has been exposed. The psychoanalytic conception of the Oedipus complex



has been produced with a view to explaining this situation and the "normal" progression to heterosexual satisfactions. The conception of the castration complex has been added to this to fill certain gaps. The writer has speculated from insufficient data, a theory of sexual evolution. In "Erogenous Maturation" the complexity of this problem has been outlined and a number of tentative paths for research attack suggested. We have to be cautious in accepting data already accumulated in regard to homoerotic impulses. That sexual inversion is an ultra-important fact in psychopathology cannot be gainsaid. That a reference to homosexuality explains the manifestations of any mental disorder is incorrect. Anyone moderately familiar with homosexual society must have observed the stable character of a proportion of its members quite as large as the proportion of stable people in admittedly heterosexual society. The overt homosexual who develops a mental disorder, mild or severe, is a most profitable subject for study, more profitable by far at this stage of our knowledge or ignorance of the evolution of sexual impulses than is the individual who encounters difficulty in living with a woman.

The utilization of the conception of repressed or unconscious homosexuality is probably more justified than is use of the notion of universally repressed polymorphous perversity. At the same time the carelessness of psychiatric workers by which they find only what they are looking for and record only conclusions with an occasional excerpt of data torn from their context, leaves the whole conception of latent, repressed, and unconscious homosexuality in the condition of an interesting speculation rather than a scientifically demonstrated hypothesis. To revert again for the moment to our work at Sheppard Hospital, I may mention that—in spite of my firm conviction that this conception will prove a very valuable one—in the really considerable quantity of rather exact observations which we have accumulated I am unable to find what I would regard as scientific demonstration of the conception. We have not yet hit upon crucial matter which would determine the acceptance of this hypothesis rather than other perhaps less plausible explanations, but explanations the application of which have not been disproved.

The great wealth of material which could more or less properly be offered in a paper on our broad theme overwhelms one. May I



conclude with the plea that little be taken for granted of the traditions, speculations and theories which have sprung up in the field of abnormal psychology and psychiatry, and that we seek whenever opportunity is afforded for data which are exact and comprehensive—data which carry their history and their context so that they are fact to the best of our limitations. While the few who by great good fortune have at least limited facilities for intensive research in psychopathological topics are attempting to fill many theoretic gaps and provide a sound basis for the development of precise hygienic and curative measures, we cannot do justice to our public responsibilities by waiting through the years until research shall have been properly supported or through the decades until the few shall have solved the many problems. The principle increments in our understanding of mental disorder must for some considerable time come from the scientific acumen of clinical psychiatrists.

## SOME PRESENT-DAY VIEWPOINTS IN EPILEPSY

A SYNOPSIS OF THE PROCEEDINGS OF THE GESELLSCHAFT DEUTSCHER  
NERVENÄRZTE HELD IN DÜSSELDORF IN SEPTEMBER, 1926<sup>1</sup>

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The sixtieth annual meeting of the German Neurological Association, held in Düsseldorf in September, 1926, was devoted in large part to a symposium upon the subject of epilepsy. The following pages represent an attempt to provide an outline of the general trend of the discussion which took place.

In the opening communication, entitled *The Pathogenesis of the Epileptic Seizure*, a general orientation is presented by Foerster, whose name is associated in the present connection with the employment of encephalography (ventriculography) for the pre-operative detection of intracranial pathology in cases of epilepsy.<sup>2</sup> On the present occasion, he is not concerned with the nosological position of epilepsy, or the various forms of epileptiform disorder, but with the pathophysiological problem of the epileptic seizure—a symptom, or better a syndrome, which represents a definite type of reaction on the part of the central nervous system—a reaction to a stimulus of some kind, and not merely a phenomenon of release, as has often been supposed in the past and even now continues in some quarters to be assumed.

Foerster considers briefly the very various conditions which may serve as stimuli capable of provoking an epileptic seizure, naming some fourteen different general varieties of *irritative epileptogenous noxae*, as he calls them, in addition to the two further groups of idiopathic epilepsy and symptomatic epilepsy without demonstrable etiological factors. The first two divisions in this tabulation, congenital cerebral disease and heredo-degenerative processes, are passed over without comment. Of cerebral trauma (III), undoubtedly a very frequent cause of epileptiform convulsions, Foerster remarks that the latter may follow as an almost imme-

1. Published in the D. Ztschr. f. Nervenheilk., Dec., 1926, 94, 15-129.

2. Foerster, A.: Encephalographische Erfahrungen, Ztschr. f. d. ges. Neurol. u. Psychiat., 1925, 94, 512. In his demonstration of the frequency of intracranial pathology (old encephalitis, etc.) as demonstrable by encephalography even in cases presenting few or none of the characteristics of Jacksonian seizures, Foerster has still further restricted the number of cases which can be labelled "idiopathic," and has here further narrowed the gap between the functional and the organic.

diate consequence of the trauma (as from bone splinters, projectiles, hematoma—early traumatic epilepsy); or seizures may make their initial appearance a very considerable interval after the trauma (late traumatic epilepsy). In any event the etiological bearing of the trauma is not excluded by the length of the interval between the trauma and the initial seizure, or by the absence of severe early symptoms (concussion) or of focal symptoms, or by the absence of cranial injury, or by the absence of interparoxysmal focal or general symptoms, or by the fact that the seizure does not appear to be focal in character, or by the absence of post-paroxysmal evidences of destruction of brain tissue, or by a discrepancy between the site of the cranial trauma and the type of focal seizure which may later develop. Naturally, however, every slight head injury is not the cause of epileptic seizures; for in how many anamneses, after all, is such a history conclusively absent? But it is undoubtedly of advantage to investigate every case as exhaustively as possible by means of the modern methods of encephalography and of certain methods of examination relating to the spinal fluid. Encephalography frequently reveals reactive changes in the ventricles which are the expression of the cerebral changes brought about by the trauma. It should be borne in mind in particular that in the presence of other epileptogenous noxae a head injury may often act as an accessory noxa which plays more or less part in influencing the number and severity of the seizures. *Birth trauma*, also, is of etiological importance in the convulsive disorders; for here we have to do not only with injury to the brain mechanically produced, but even more particularly with venous stasis of considerable duration which may lead to the rupture of veins and other serious sequelae. Here, as in the case of head injuries in later life, the severity of the initial symptoms is not decisive, nor is the length of the interval between the trauma and the onset of epileptic convulsions, nor the presence or absence of permanent evidences of brain tissue loss.

That *brain tumors* (IV), whatever their type or situation, may give rise to epileptiform seizures is too well known to require discussion; they produce this result either in a direct manner, by acting as an irritative noxa, or indirectly through increase of intracranial pressure, through occlusion of the ventricles, through a concomitant arachnitis with its effect upon the circulation, secre-

tion, resorption or pressure of the cerebrospinal fluid, through an accompanying increase in brain volume, and possibly through toxic influences. What should in particular be emphasized is that epileptiform convulsive seizures may sometimes be for years the sole symptoms of an intracranial neoplasm. In spinal cord tumors epileptic seizures are very rare.

*Cysticercus* (V) is a relatively frequent cause of epileptic seizures, whether it be the rare single cyst, multiple cysts, or a cysticercus meningitis. Here again, the seizures may be for years the only symptom of disease. It is rather frequently the case that in a previously latent cysticercosis convulsive seizures make their first appearance immediately after head injury.

*Congenital Syphilis* (VI) is a frequent cause of epileptic seizures, especially in children. These convulsions may have their onset shortly after birth, during infancy, or much later in life. It should be expressly emphasized that antisiphilic treatment—especially mercury and Swift-Ellis treatment—is often capable of remarkable results in such cases. Acquired syphilis, likewise, may be characterized by the occurrence of epileptiform seizures in the secondary stage (early syphilitic meningitis); these cases demand immediate intensive intraspinal therapy, subsequently repeated at regular intervals. Mention should also be made of the arachnitis which frequently accompanies specific syphilitic processes (gumma, meningo-encephalitis, endarteritis) and which results in disturbances in the circulation, secretion and resorption of the cerebrospinal fluid such as may be responsible for the continuance of seizures even after the cure of the original specific lesion. In such cases only operative procedures afford relief (removal of cysts, relief of the occlusion of the ventricles by corpus callosum puncture, etc.). The syphilitic pachymeningitis hemorrhagica interna of adults likewise not infrequently requires operative interference on account of the fulminating symptoms (status epilepticus) which often accompany it. The epileptiform convulsive seizures which may be present in general paralysis, syphilitic pseudo-paresis, syphilitic capillaritis (Alzheimer), and tabo-paresis, need be mentioned only in passing. But reference should be made to the not infrequent occurrence of convulsions in tabetics without there being present in these patients any of the pathological processes above mentioned. It seems doubtful, although the assumption has been

made, whether syphilitic disease of the internal organs without involvement of the central nervous system can give rise to epileptic seizures through the medium of intoxication merely.

With regard to tuberculous processes (VII) there is to be mentioned the circumscribed chronic tuberculous meningitis in which convulsive seizures may often constitute for considerable periods the only symptom of disease. Once again, in this disorder the convulsive seizures not rarely make their first appearance shortly after a head trauma. The condition may be cured by a decompression. There is further to be cited the simple—that is, not accompanied by the formation of true tubercles—chronic arachnitis serofibrosa adhesiva in tubercular individuals, which may be circumscribed but is more usually diffuse. In the circumscribed form, decompression *in loco* and the breaking up of meningeal adhesions or removal of cysts; in the diffuse form, opening of the cisterna magna and drainage of the fluid, or in the case of occlusive hydrocephalus puncture of the corpus callosum, are the therapeutic methods of choice. It should be added that congenital hydrocephalus is not infrequently attributable to tuberculosis.

Passing over the next three subdivisions of the various “irritative epileptogenous noxae” (VIII, IX, X—brain abscess, cerebral edema, meningitis—leptomeningitis et arachnitis chronica), we have to consider the *true* and the *so-called encephalitis of children* (XI) which, as is well known, is a very frequent cause of epileptic seizures; and attention should especially be called to those cases in which the initial pathological process is accompanied by very transitory symptoms only, without paralysis and without convulsions. Convulsions often supervene for the first time at a much later period. These cases are not infrequently to be recognized by the presence of left-handedness. Their diagnosis in general is facilitated by encephalography.

In *epidemic encephalitis* (XII), epileptiform convulsions are less frequent, but they occur nevertheless more often than one would gather from the literature. In *sclerosis multiplex* (XIII) there may occur either local or generalized seizures. *Presenile gliosis* (XIV) is often manifested by convulsions long before any of the characteristic symptoms of the disease become evident.

Of the *exogenous toxic agents* (XVa), alcohol is by far the most important. The strictest abstention from alcoholic indulgence for



the duration of life is a *conditio sine qua non* in the treatment of every case of epileptiform convulsions, no matter of what character—even when some other irritative noxa (tumor, cysticercus, post-traumatic process, etc.) has been completely extirpated. Every child who has undergone a birth trauma, or who has had symptomatic convulsions of toxic-infectious etiology, or who comes from a family in which epileptic seizures have occurred, should be trained to absolute abstinence. Among other exogenous poisons of practical importance may be mentioned *ether*, which at the beginning and end of narcosis may often give rise to convulsions in predisposed individuals; *camphor*, which is related to monobromate of camphor, a very efficient convulsant (Muskens); *lead*; *cocaine* and its derivatives; *caffeine*; and *santonin* and other anthelmintics, especially *thujone*.

It should be noted with reference to these chronic intoxications that they may often give rise to organic changes in the brain which continue in themselves to act as irritative epileptogenous noxae after the poison in question has been eliminated from the system. Of alcohol especially is this true, for its chronic abuse may lead to a chronic leptomeningitis and arachnitis, sometimes even to a pachymeningitis hemorrhagica interna; and the same may be said of lead, which may give rise to severe blood-vessel changes. The worst offender in this respect is carbon monoxide; acute poisoning with carbon monoxide, as is well recognized, may be followed not infrequently by progressive blood-vessel changes such as often become manifest for the first time only after the lapse of a number of years and may then constitute an irreparable source of epileptic seizures.

Among endogenous intoxications (XVb), uremic convulsions are to be explained in the main as arising from the retention of the products of protein catabolism, although the fact should not be overlooked that factors other than a direct toxic effect upon the central nervous system are also operative, such as, for example, increased intracranial pressure, cerebral edema, pathological changes in the blood-vessels of the brain, capillary hemorrhages, or acute vasoconstriction of the cerebral blood-vessels. It is a fact that uremic convulsions can sometimes be promptly checked by lumbar puncture with free spinal drainage, and this cannot be due exclusively to the removal of toxic substances in the spinal fluid.

The convulsions of diabetic coma represent the typical effect of an acute acidosis.

In the toxæmias of pregnancy and in eclampsia the situation with respect to convulsive seizures is much the same as in uremic convulsions. The great toxicity of the poison present in eclampsia is witnessed by the fact that cases have been known in which the milk of the eclamptic mother has given rise to epileptic seizures in the nursing.

Among the seizures arising in connection with gastro-intestinal auto-intoxication, by far the most important are the convulsions which follow upon gastro-intestinal upsets in childhood, though it is not clear to what particular noxa are to be attributed convulsions of this type. The writer does not find himself in agreement with the view of many pediatricians that true epileptic seizures do not occur in infancy in consequence of dietary errors but are always evidence, on the contrary, of the presence of an intracranial lesion.

The convulsions of childhood, of toxic-infectious origin, form an important group in which the seizures are observed in connection with a wide variety of infectious diseases: scarlet fever, measles, diphtheria, erysipelas, chicken pox, dysentery, whooping cough, etc. It is not always an easy matter in the individual case to say whether the cause of convulsions of this type is not to be found in the meningeal complications which not infrequently attend these infections; but the extremely transitory character of this type of seizure, together with the absence of any other sign of meningeal involvement, makes a purely toxic-infectious origin of the convulsions more than probable.

*Circulatory disturbances* (XVI) make up one of the most important groups of epileptogenous noxae. Arteriosclerosis, obliterative endarteritis of various types, true and false aneurysms, racemose arterial and venous aneurysms, are all a frequent cause of convulsive seizures. Cerebral thrombosis is often ushered in with convulsions. Air embolism and fat embolism may give rise to epileptiform seizures.

A consideration of great importance is the fact that sudden interruption of the cerebral circulation by ligation of the carotid and vertebral arteries is one of the most certain means for bringing about convulsions in the experimental animal. It is also possible to induce a convulsion in the human being by carotid compression.

The occurrence of seizures in Stokes-Adams' disease is a well-known phenomenon. In a similar category belong the convulsions sometimes associated with severe disease of the carotid arteries, with congenital anomalies of the circle of Willis, with congenital narrowing of the lumen of the carotids, with Raynaud's disease, with angiospastic migraine, and with any angiospastic condition, of reflex origin, of the cerebral blood-vessels. In any case, interference with the arterial circulation of the brain is one of the most potent of irritative epileptogenous noxae.

In connection with the epileptic seizure, whether of spontaneous occurrence or induced by faradic or mechanical stimulation of the cortex or by hyperventilation, there occurs prior to the paroxysm a noticeable vasoconstriction of the cerebral blood-vessels with definite reduction of the brain volume. This observation has been made experimentally and, in the case of the human subject, on the operating table (cf. Sargent, Cushing, Kennedy and Hartwell, *et al.*) The phenomenon is so characteristic indeed, that it is often possible to predict with considerable certainty the immediate onset of a seizure. A rapid pre-paroxysmal fall in the pressure of the spinal fluid accompanies the vasoconstriction and reduction of the brain volume; this has been recorded of the experimental animal by Cobb and MacDonald and of the human subject by the writer.

This pre-paroxysmal anemia and reduction in volume of the brain, which often, indeed, persists up to the onset of the paroxysm, is rapidly followed by a tremendous venous stasis, with deep cyanosis of the surface of the brain and a very considerable increase in its volume; the latter is the result of the venous stasis induced by the convulsion. During this period the spinal fluid pressure increases more or less considerably, often to a point in excess of its original level. In view of the fact, therefore, that on the one hand obstruction of the arterial circulation constitutes one of the most important of epileptogenous noxae, and that on the other a marked degree of arterial vasoconstriction is the immediate precursor of the seizure, it is extremely tempting to look upon these circulatory phenomena as the specific cause of the convulsion and to assume that all the various noxae above considered produce their epileptogenic effect via the circulatory system, the cerebral blood-vessels being, in other words, their primary point of attack. The question is still very much of an open one, for it has not been

proved that vasoconstriction is a *conditio sine quo non* of the seizure. Certain experiment observations of Jacobi's would seem to controvert such a belief, yet nevertheless the fact remains that vasoconstriction is an extremely important, perhaps the most important, single component in the total nexus of causative factors. Favoring this view is the further fact that in the exposed brains of patients with convulsive seizures it is not infrequently possible to observe a striking pallor in the region of the focus from which the seizure emanates; Sargent has found this to be the case in traumatic epilepsy, and the writer has observed it in tumors, cysticercus cysts, traumatic epilepsy, idiopathic epilepsy and in other intracranial conditions attended by convulsions.

The vasomotor theory of the epileptic seizure, which originated with Nothnagel and which today is upheld by numerous workers, has in fact much to be said in its favor. The theory explains among other things the paroxysmal character of the convulsion and the relatively slow spread of the convulsive reaction in the presence of a purely local application of the stimulus. It explains the pre-paroxysmal aura, as a stimulation of sensory elements in the cortex, and the post-paroxysmal paralytic phenomena, as a transitory suspension of function through complete arrest of the circulation. It explains the loss of consciousness which attends the seizure; its relatively late appearance in the case of focal attacks with subsequent generalization of the convulsion, since the complete anemia of the entire cortex, which is the cause of the loss of consciousness, makes its appearance only gradually; and, conversely, the relatively early loss of consciousness in the case of convulsions which are generalized from the beginning, in which the convulsive center in the pons may be taken to be the point of attack of the stimulus, the stimulation of this center paralyzing instantaneously the circulation of the entire cortex and thereby causing suspension of consciousness. It explains the occurrence of epileptic equivalents, particularly those involving the internal organs. Finally, the fact should not be overlooked that many epileptics are outspoken sympathicotonic; but too much weight should not be placed upon this circumstance, for a high grade of vagotonia is not infrequently present in these patients. Neither vagotonia nor sympathicotonia is of itself characteristic of epilepsy; rather is it the exaggerated reactivity in general of the blood-vessels which is distinctive.

Nothing definite has thus far been established regarding the irritative noxae which may be operative in so-called idiopathic epilepsy (XVII). In idiopathic epilepsy (its clinical differentiation cannot be entered into here) there do occur demonstrable pathological changes in the cortex. There is almost always present a concomitant leptomeningitis and arachnitis, together with serious disturbances in the circulation, secretion and resorption of the cerebrospinal fluid. Regarding the significance of the primary cortical process (which may of course be present in different regions in very varying degrees), the fact seems to Foerster to be of great importance that even in idiopathic epilepsy the seizures very often have the appearance of being typically focal in character, originating in a considerable proportion of cases in the precentral area, and that operative excision of the focus in question abolishes the convulsions or markedly reduces their number and severity; and furthermore, that pre-paroxysmal and post-paroxysmal focal symptoms are far from infrequent in idiopathic epilepsy. The results that attend the operative regulation of the disturbances involving the spinal fluid bear witness to the great importance of the meningeal pathology, with its effects upon the physiology of the spinal fluid already mentioned, as an independent agent in the causation of convulsive seizures.

It is undeniable that the circulatory apparatus plays a prominent role in idiopathic epilepsy, as it does in the case of all the other epileptogenous noxae. On the other hand, Foerster does not regard as sufficiently inclusive the viewpoint of those who, disregarding the organic changes in the cortex and in the meninges, attribute the causation of the seizure solely to a vasoconstriction of sudden occurrence, without taking any account of the means whereby the latter is brought to pass.

The same noxa, applied to the same point with the same intensity and for the same length of time, gives rise to a convulsion in one individual and not in another. This is illustrated most clearly in the case of tumors and of traumatic lesions in the Rolandic area. It has not as yet been shown whether the most powerful convulsant known, faradic stimulation of the cortex, is capable of evoking convulsions in all human subjects alike. But in animals there are certainly marked individual differences in the readiness of their convulsive response to toxic substances and to the faradic current.



The effectiveness of a given convulsive agent depends not only upon the intensity and duration of the stimulus but upon the level of the threshold of convulsive response (*Krampfreizschwelle*).

If all individuals reacted to a powerful noxa, such as the faradic current, with a convulsion, then such a reaction would represent a property inherent *eo ipso* in the central nervous system, and the reaction would be one which would be liberated almost exclusively through the agency of a stimulus of non-physiological character. Certain individuals, however, are undoubtedly the subjects of an abnormal predisposition to convulsions (*Krampfbereitschaft*)—in other words, a lowered threshold of convulsive response.

1. This increased disposition to convulsions may be *inherited*; it represents a definitely inheritable character which may be revealed by careful investigation of the pedigree, not in cases of idiopathic epilepsy alone, but in patients with seizures of other etiology as well (trauma, tumor, cysticercus, etc.).

2. An increased disposition to convulsions can probably be created through injury to the germplasm; especially is this true of parental alcoholism.

3. The disposition to convulsions is well marked in children, and very slight stimuli are capable of producing convulsions in them. A history of convulsions in childhood is rather frequently present in the anamneses of adults suffering from seizures of whatever type.

4. The disposition to convulsions is increased at puberty; at this time noxae previously present sometimes manifest themselves for the first time, or noxae previously productive of convulsions but since in abeyance may again become operative at this period.

5. The disposition to convulsions may become increased during the period of involution, especially in women.

6. The disposition to convulsions exhibits seasonal variations, being more marked in spring than in summer and winter, and rising to a second peak in autumn.

7. The disposition to convulsions exhibits daily variations, being greatest at the transition from sleep to waking and vice versa; in many individuals it is especially marked during sleep.

8. The disposition to convulsions is increased after meals.

*Do criteria exist for estimating the present of an increased disposition to convulsions?* The most reliable criterion for this

purpose consists in determining the threshold of response to the faradic current on the part of the exposed cortex. It is easy to bring about a convulsion in this way in individuals who have seizures, and this is also true when any part of the cortex is thus stimulated. This is equally the case in patients whose spontaneous attacks have every appearance of being focal in type; from any other portion of the cortex in such cases a convulsion can be provoked which will exhibit a focal character corresponding to the cortical region to which faradism has been applied, although, to be sure, convulsions are most readily induced by stimulation of the region from which the spontaneous seizures of the patient emanate. The statement repeatedly found in the literature, that convulsions cannot be produced from other regions of the cortex, is incorrect; this impression could only arise because of the application of the cortical stimulus in the presence of general anaesthesia.

Whether by faradic stimulation of sub-cortical centers, especially in the medulla and pons, it is possible to evoke convulsions readily in patients already subject to seizures, or to produce them in such patients more readily than in normal individuals, cannot as yet be stated.

Various other methods have been employed for the detection of an increased susceptibility to convulsions. *Hyperventilation* is the most convenient and relatively efficient of these methods, but it gives rise to convulsions in only about 40 per cent of cases, and then only under favorable conditions such as in themselves tend to increase the disposition to convulsions; it is, therefore, not a very reliable means of demonstrating an increased susceptibility to seizures. This is even more true of other methods for the artificial induction of convulsions, such as compression of the carotids, injection of adrenalin, administration of alcohol.

On the basis of his own experience, Foerster considers incorrect the statement frequently found in the literature that epileptics are characterized by an increased electrical irritability of the peripheral nerves, that they exhibit the reaction of tetany with especial frequency, or that there invariably occurs a progressive reduction in the threshold of stimulation with the approach of the seizure. They do, however, manifest the greatest variability and instability of the threshold of stimulation on the part of the peripheral nerves, since this threshold varies from day to day, from

hour to hour, and almost from minute to minute; and this variability stands out in sharp contrast with the uniformly low threshold present in tetany.

The myoclonic reflex and spontaneous twitchings described by Reynolds and by Muskens are of frequent occurrence in patients with convulsive disorder, but they are often absent and are not a reliable criterion of an increased disposition to convulsions. The epileptiform reaction of Rosett is of greater value in this regard.

Since a predisposition to convulsions is frequently an inheritable characteristic, it is appropriate to seek for constitutional qualities which may be associated with it. Among sufferers from convulsive disorders the *dysplastic type of physique* is prominent; Foerster found it present in about 50 per cent of patients. Many of these individuals have well-marked dysglandular characteristics—eunuchoid, hypopituitary, hyperthyroid and myxedematous; but there does not exist among convulsive individuals a more definitely characteristic type of somatic constitution. Physical stigmata—such as skull deformities, high palate, irregularity in the spacing of the teeth, etc.—are sometimes present, but only in the minority of patients. The same may be said of lefthandedness and speech defect. A sympathicotonia, particularly of cephalic distribution, is present in a considerable proportion of convulsive individuals. The so-called vasoconstrictor type of constitution described by Peritz is frequent. But there are numerous vagotonics among persons subject to convulsions, and it is conspicuously the case that in one and the same individual a condition of vagotonia may change with suddenness into one of sympathicotonia, and vice versa.

In the matter of *psychological type* convulsive individuals exhibit a much greater degree of constancy, in the opinion of Foerster, than they do with respect to somatic characteristics. The traits belonging to the epileptic character are to be found in the majority of all patients, no matter what the etiology of their convulsions; and these same traits Foerster has repeatedly demonstrated as present in their relatives, especially the parents. The epileptic character seems to be an hereditary characteristic which goes hand in hand with an increased disposition to convulsions.

*The influence of the glands of internal secretion* has already been suggested as being of some importance in the light of the

large number of dysglandular types which occur among the subjects of convulsive disorder. Among the glands which are said to lower the threshold of stimulation productive of a seizure are the adrenals, corpus luteum, pineal gland (?), persistent thymus, pancreas and thyroid; among those having the opposite effect of raising the threshold are the parathyroids, gonads, hypophysis, the juvenile thymus, pancreas (?) and thyroid.

(a) *Adrenals*. Animals from which the adrenals have been removed are refractory to the action of convulsant drugs; in the human subject injections of adrenalin may provoke a seizure. Extirpation of the adrenals has been practiced as a therapeutic measure, but the results have not so far been encouraging.

(b) *Persistent thymus*. This, and status thymicolymphaticus, are found in a large proportion of convulsives, whether of the idiopathic or of other types.

(c) *Corpus luteum*. In pregnant animals convulsant drugs are effective in smaller doses than in other animals. In the human subject it is not infrequently the case that the onset of seizures coincides with the first appearance of the menses or that convulsions previously in abeyance make their reappearance at this time. There is a purely menstrual type of epilepsy which may even be inherited; in many such cases convulsions cease to occur after the menopause. There are also cases in which convulsions make their first appearance, or recur after a period of freedom from them, during pregnancy, to disappear after the puerperium; or epilepsy already present may grow more severe during pregnancy.

(d) *Pineal gland*. Of this gland little is known regarding its relation to the disposition to convulsions. On account of its known antagonism to the hypophysis, however, it might provisionally be placed in the group of glands which depress the threshold at which convulsions appear.

(e) *Parathyroids*. There is such a thing as epilepsia parathyreopriva in animals; convulsions occur more readily when a cerebral lesion is simultaneously present. Epilepsia parathyreopriva occurs also in the human subject, e. g., tetany-epilepsy. Parathyroid implantation has a favorable therapeutic effect in human epilepsy, and extract of fresh parathyroid is said by Bolten to be also efficacious.

(f) Of the *juvenile thymus* nothing definite is known in the present connection.

(g) *The gonads* have a definite influence in raising the threshold of response to epileptogenic stimuli. Castrated animals react to convulsants more readily than normal animals. Many subjects of convulsive seizures exhibit an aplasia or an arrest of development of the ovaries or testes. Oophorectomy, and likewise the climacteric, may give rise to the convulsive state or may increase the number or severity of convulsions previously present; in all such cases large doses of ovarian substance are therapeutically effective.

(h) *The hypophysis* is perhaps the most important gland in the present group. Dystrophia adiposogenitalis and aplasia of the hypophysis are frequently associated with epileptiform seizures. Tumors which result in the clinical picture of dystrophia adiposogenitalis are often productive of seizures, whereas very seldom is this true of hypophyseal tumors which give rise to acromegaly.

(i) *The pancreas* belongs among the glands which lower the threshold of convulsive response, as illustrated by insulin convulsions.

j) *The thyroid* acts sometimes as a depressor of the threshold in question, sometimes in the opposite manner. Hyperthyroidism and even fully developed Graves' Disease are not infrequent among epileptics. In the experimental animal, on the other hand, thyroidectomy depresses the threshold and thyrotoxin raises it considerably. Thyroid extract is therapeutically effective in many epileptics. A number of convulsive patients, especially women, exhibit myxedematous characteristics.

The fact should not be overlooked in this connection that the glands of internal secretion form a closed system in which the individual glands are closely coordinated with one another; hypertrophy of the adrenals takes place, for example, in consequence of castration, and hypertrophy of the thyroid and the hypophysis occur in pregnancy—an explanation of the fact that pregnancy often brings about the cessation of seizures. But important though the endocrine glands may be with reference to the disposition to convulsions, they are not the only factor which has an influ-



ence upon the threshold of convulsive response but only one of a number of factors which play a part.<sup>3</sup>

Every epileptic seizure is to some extent the result of preceding seizures and the cause of subsequent ones: "Epilepsy, a self-perpetuating disease" (Gowers); even after the removal of an irritative noxa the seizures may persist. Often, to be sure, the noxa has only seemingly been removed; but even in those instances where we may assume its removal has been complete the seizures may return. We know that as a consequence of the attack cerebral changes are initiated which themselves act as an irritative noxa; for every seizure constitutes a severe cerebral trauma in the form of minor hemorrhages and contusions due chiefly to the tremendous venous stasis and increase in intracranial pressure present at the height of the attack and thereafter.

*The substrate of the epileptic convulsive reaction.* The substrate of the convulsive reaction is the central nervous system; the musculature is simply the end-organ of the discharge on the part of the nervous system. The outward appearance of the epileptic seizure varies extraordinarily from case to case, but in the individual instance it is the monotonous and stereotyped character of the attacks which is conspicuous, even though cases may be observed in which the seizures of a given individual are variable in their character. Out of the very large number of outward semblances which convulsive seizures may exhibit, it has become possible to differentiate certain definite types.

The point of attack of the convulsant agent and the region from which the convulsive reaction is liberated vary from case to case. Many noxae act ubiquitously on all parts of the nervous system (e. g. poisons); others act locally upon circumscribed areas of the cortex or upon various sub-cortical centers in the medulla, pons and cerebellum. Even the isolated spinal cord is capable of originating tonic-clonic seizures, as Cobb and Uyematsu, Muskens and others have shown, although this has not been demonstrated for man. But the question is still an open one, whether the cortex is necessary for the occurrence of the fully developed convulsion, particularly for that of its clonic component. This has been maintained by many, but the recent investigations of Cobb and Uyematsu and

3. For a recent consideration of this topic, especially from a histological standpoint, see Schou, H. I., and Susman, W.: The Endocrines in Epilepsy: A Histological Study. *Brain*, 1927, 50, 53.—(H. A. B.)

of Elsberg and Pike have shown that after exclusion of the cortex, and even of the thalamus, absinthe or thujone will still provoke tonic-clonic convulsions; the clonic component is, however, slower and more feeble.

In man the majority of irritative noxae act upon the cortex, many of them only upon the cortex, and the outward appearance of the seizure varies according to the region of the cortex involved. If the motor cortex be divided into areas, on the model of C. and O. Vogt, it will be found that the convulsions vary in their appearance and behavior with the particular area from which they have their origin; as follows:

1. The pre-central gyrus — 4 (area *giganto-pyramidalis*) + 6AB (area *agranularis centralis*) — the area for isolated movement of the head, trunk and extremities. The seizure is characterized by a focal onset and a march of the convulsion through the parts of the body corresponding to this area. The discharge of the stimulus takes place via the pyramidal tract. After excision of a single given focus, the part of the body corresponding thereto no longer takes part in the convulsive march at the beginning, but later, when the seizure has become generalized, it may become involved through participation of the corresponding focus in the homolateral hemisphere in the discharge and especially through that of the sub-cortical centers.

2. The superior frontal gyrus (area *agranularis frontalis*) — 6AB. The attack begins with conjugate deviation of the eyes toward the contralateral side, followed by rotation of the trunk and by tonic-clonic convulsions of the contralateral extremities; the arm may be involved first, but usually arm and leg are involved simultaneously. There is no aura. This area is extraordinarily "convulsive." In idiopathic epilepsy it constitutes a site of predilection for the origin of convulsions.

3. The middle frontal gyrus (area *frontalis intermedia*) — 8, at the base of the second frontal convolution. The attack begins with clonic twitchings of the eyeballs toward the contralateral side. This may be the limit of the seizure; or the discharge may spread to area 6AB and the attack assume the characteristics of that described under (2), or to the exterior central convolution and the attack have the appearance typical of that described under (1).

4. The post-central gyrus — 1, 2, 3, the cortical termination of

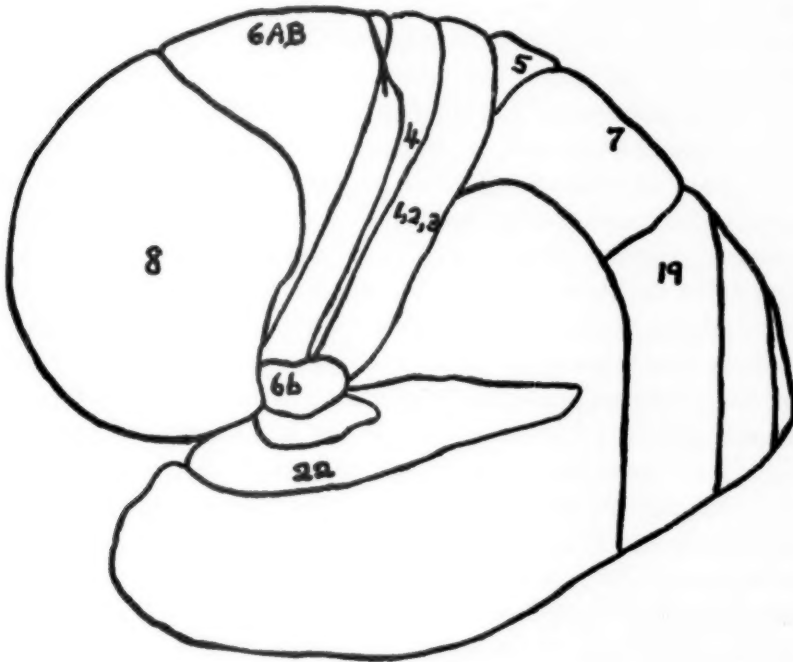
the sensory tracts, conspicuous for its extensive somatotopic sensory and motor integration, electrically stimulable and then giving rise to isolated movements of the trunk and extremities, as is true of the anterior central convolution, but having a higher threshold of stimulation (by about 2 milliamperes) than the latter. The isolated movements arise through the agency of the anterior central convolution. Excision of a given focus in the anterior central convolution abolishes the reaction to stimulation on the part of the posterior central convolution. Attacks originating from the latter are characterized by a sensory aura, the spread of the sensory manifestations corresponding to the somatotopic integration of this area. The motor discharge follows the same sequence as in attacks originating in the anterior central convolution, the convulsive discharge passing from the posterior convolution via the short association fibres (U-fibres of Meynert) to the anterior and thence via the pyramidal tract to the periphery; thus the posterior central convolution possesses no motor corona radiata of its own for isolated movements. Superficial lesions of this convolution do not abolish the focal excitability of this area, but only deep lesions do so. Seizures originating in the posterior central convolution terminate more readily than those of the anterior. They are often accompanied by tremor.

5. The superior parietal gyrus — 5 and 7 — is a cortical termination for sensory tracts but has little or no sensory somatic integration, at least not nearly to the extent of the posterior central convolution. Attacks arising in this area have a sensory aura, for the most part simultaneously over the entire contralateral half of the body—often with severe intestinal and precordial pain. In the case of irritation of the anterior portion of this area, the convulsive discharge involves the contralateral extremities, the arm and the leg *in toto* and simultaneously (the arm or the leg may precede, but the other extremity follows very rapidly, as does also the homolateral extremity), followed by conjugate deviation of the eyes. With irritation of the posterior portion of the area, it is the latter which begins the sequence of events, and the involvement of the extremities follows.

6. The area pre-occipitalis — 19. Stimulation of this area produces turning of the eyeballs toward the contralateral side. Seizures originating from this region have a distinct visual aura; sub-

sequent to the turning of the eyes, the attack pursues the same sequence as those described under (5), with turning of the head and trunk and tonic-clonic spasms of the contralateral extremities.

7. The superior temporal gyrus — 22. The convulsive discharge consists in turning of the eyes, head and trunk to the opposite side and tonic-clonic spasms of the contralateral extremities *in toto*. An auditory aura is frequently present, sometimes a gustatory or olfactory aura. The attack is not infrequently precipitated by an auditory stimulus.



For Schema in full, see Deutsch. Ztschr. f. Nervenheilk., *loc. cit.*, p. 43.

8. This area — 6b — includes the operculum centrale and probably the corresponding portions of the pre-central gyri. Stimulation of this area gives rise to rhythmical masticatory, swallowing and smacking movements, to grunting, groaning or yelling, and to hiccups, and these effects persist considerably longer than the stimulus; the convulsive discharge regularly begins with one of them, while the further course follows that of seizures originating from the pre-central or post-central gyrus. The attack may be preceded

by a gustatory or olfactory aura or by a sensory aura referred to the larynx, throat or mouth.

Epileptiform seizures may result, however, from stimulation of regions which are not part of the motor areas of the cortex. The stimulation is transmitted from a non-motor region to the nearest motor area or areas via intercortical association fibres, so that it is from the latter that the convulsive discharge takes origin. Circumscribed irritative noxae located in non-motor regions act in the same way in this respect as faradic stimulation of the cortex; and the characteristics of the seizure are those of convulsions originating in the motor area next adjacent.

Noxae which affect the cortex ubiquitously—such as poisons, circulatory disturbances, etc.—may often give rise to convulsions which are generalized from the beginning. It has nevertheless been Foerster's experience that convulsions often have the appearance of a focal attack even in the presence of a diffuse process in the cortex, evidently because the pathological changes are especially well developed at some given locus in the cortex. This is true of a considerable number of idiopathic cases, in which the focal attacks most usually proceed from the superior frontal gyrus (6AB), either invariably the right in a number of cases, or always the left, as in others, or sometimes the right and sometimes the left, as in numerous others. The attack in idiopathic epilepsy originates only rarely, in general, in the pre-central gyrus (4), somewhat more often in the middle frontal gyrus (S), and occasionally in the post-central gyrus (1, 2, 3), or the superior parietal gyrus (5 and 7), or the area pre-occipitalis (19).

*Sub-cortical centres as the point of liberation of epileptiform convulsions in man.* It is a recognized fact that it is a simple matter to evoke typical epileptiform convulsions in the experimental animal by means of electrical stimulation of the pons or medulla; but in man our knowledge of the motor effect of such stimulation of sub-cortical centres is very meagre. Foerster's clinical experience, however—with cases of hemorrhage, abscess, tubercle, tumor in the cerebellum, of hemorrhage or tumor in the pons or peduncles, of disease of the vertebral arteries, of hemorrhage, meningitis or tumor in the ventricles—has led him to believe that epileptiform convulsions may, in the human subject as well, undoubtedly have their origin in sub-cortical centers; such attacks appear to be predominantly tonic in character, although clonic spasms are also seen.



If a given stimulus be applied to a given point in the motor cortex, the response of the focus in question varies according to the character of the stimulus; with a galvanic current it takes the form of a brief clonic twitch of the muscle; with a faradic current, of a tetanic contraction which lasts as long as the stimulus is applied. (In certain motor areas, it is true—such as the masticatory area (6b)—the effect of stimulation outlasts the duration of the stimulus, but only briefly, and the response is confined to the peripheral end-organ in question). Normally, however, the intensity of the reaction is proportional to the intensity of the stimulus. One of the peculiarities of the epileptic reaction, on the other hand, resides in the fact that even a feeble stimulus calls forth a maximal discharge on the part of the focus in question and the contraction of the end-organ is a maximal one, or at any rate disproportionate to the stimulus. More important still, the reaction outlasts the stimulus; the discharge is not confined to the focus originally stimulated, but the excitation spreads immediately to neighboring foci which respond in turn with a series of clonic discharges, each focus in turn reacting in this manner as it comes under the influence of the spreading wave of excitation. This is the characteristic of the epileptiform convulsion, therefore, that a discharge on the part of a motor element in the cortex takes place, which is disproportionate to the strength of the stimulus and outlasts it, and that the excitation then spreads to neighboring elements. And the characteristic of the convulsive predisposition consists, accordingly, in an extraordinary susceptibility to excitation on the part of all the motor elements of the central nervous system; to a slight stimulus the element primarily responds with an explosion which in turn sets off the equally explosive neighboring elements, and so on.

*The purpose of the reaction.* Such a reaction as has just been described one might well be inclined to regard as irrational and purposeless. "Clonic movements do nothing but mark time," said Hughlings Jackson. "There is the mad endeavor of the centers to develop the maximum of function of every part of the body of all parts at once; this endeavor is nearly successful, the patient is almost killed."

Boerhaave, Bolten, and especially Muskens have seen in the epileptic convulsive reaction an effort to rid the body of some accumu-

lated poison (the detoxication theory); Muskens cites the pre-paroxysmal symptoms of intoxication and the post-paroxysmal sense of well being present in both patients and animals who have convulsions. While it is true that many epileptics experience a sense of relief after the seizure, even to the point of actually wishing for an attack to occur, it is questionable whether the phenomena which precede the convulsion and give rise to such a desire on the part of the patient are really intoxication symptoms, for the somatic phenomena which precede the attack and give rise to the sense of uneasiness and discomfort may as readily be the product of the chronic pathological process which is certainly present in the majority of cases of the epilepsies.

Still another theory remains to be mentioned. The *fons et origo mali* is alleged to reside in the psychological characteristics of the epileptic individual. The epileptic is said to be morally and intellectually inferior; his character brings him into collision with the environment at every turn. Unhappy in the knowledge of his own miserable ego, the epileptic strives instinctively to commit spiritual suicide from time to time. As Job cursed the day on which his mother brought him forth, so the epileptic experiences a longing for that time when, safe from the cruel realities of extra-uterine existence, he rested secure in the quiet haven of his mother's womb. In the coma of the seizure he regains the fetal state of consciousness, finding therein Lethe and Nirvana; in the convulsion itself he celebrates the memory of his untrammelled fetal movements. It may be so, but who shall prove it? To Foerster it all seems nothing but a phantasy.

## THE PSYCHOANALYTIC TREATMENT OF SCHIZOPHRENIA

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The psychoanalytic form of treatment has been taking essentially the same course in its development that other forms of medical treatment have taken, in that emphasis has been placed upon those pathological states that apparently are most amenable, whereas the exact relationship of the efficiency of the treatment to the less easily influenced conditions assumes a secondary rôle. Specifically, it has been determined that the psychoanalytic form of treatment has thus far attained much more favorable results among that class of patients referred to under the term transference neurosis, while the group called the narcissistic neurosis (psychosis) has not responded as well. The latter situation may well be due to the fact that meager attention, for the reason stated above, has been devoted to it. Because of the emphasis placed upon the neurosis of the transference type a more or less rigid and standard technic has been evolved. This technic is evidently impracticable among the psychoses. Nevertheless, there is no good reason why the various components of the method cannot be put to use in the latter conditions; we are impressed with the mass of information that can be gained from patients suffering with a psychosis; information that can be more readily understood psychoanalytically than that acquired from the "transference" patients. A most important question concerns the application of psychoanalytic knowledge to those mental states, that at present resist the efforts of the classical or formal method. In this contribution it is hoped to designate a syndrome that offers a favorable outlook under the influence of psychoanalytic therapy. From such a preliminary investigation it is probable that later a wider scope of application may be made among psychotic patients.

Since we see the same life experiences operating in the psychoses as in the neuroses, and since we believe that psychogenesis plays an influential rôle in both, it is reasonable to try a form of therapy that offers a hopeful outlook. It may be, and probably is, necessary to modify the technic to suit the new situations that are encountered. It is seldom that a standard form of treatment is utilized without qualification. For instance, Clark undoubtedly recognized

the potentialities of Freudian doctrines in the narcissistic neuroses when he formulated his "phantasy" method, which in the final analysis comprises the application of some of the fundamental features of the psychoanalytic school with a manner of approach suitable to the particular needs. The biogenetic psychoses have been the subject of much detailed academic investigation from the standpoint of psychoanalysis; but, there has been a paucity of therapeutic approach.

Reports in literature on the therapeutic application of psychoanalysis to the so-called narcissistic group are few. Among them treatment of the manic-depressive disorders has taken priority to a small extent. Abraham<sup>1</sup> reported success in the treatment of several cases of manic-depressive psychosis. Stekel<sup>2</sup> was of the opinion that the manic-depressive group does not respond favorably to this form of therapy. Clark<sup>3</sup> claimed good results and pointed out that therapy could be applied either during the depressive phase or in the inter-paroxysmal period. Our own case material, to be reviewed later, corresponds in some measure with the periodic reactions, though we have confined ourselves to the schizophrenic group.

Kempf<sup>4</sup> has given in full detail the results of analysis in the treatment of a case of dementia præcox. Among other factors he pointed out that "the mechanism and importance of the transfer and the control of the erotic cravings which makes the analysis of so-called dementia præcox cases more difficult than any other, is given special consideration, because it seems that these are the particular difficulties which have been discouraging psychiatrists from attempting an individual treatment of such cases." In later remarks he said: "The psychoanalytic treatment of repressed, perniciously regressive, dissociated personalities produces astonishingly reconstructive results, when an altruistic transference can be maintained and the wish for insight is spontaneous, that is, comes from the patient. This requires upon the part of the physi-

<sup>1</sup> Ansätze zur psychoanalytischen Erforschung und Behandlung des Manisch-Depressiven Irreseins und verwandte Zustände. Zentralblatt für Psychoanalyse, B. II, No. 6, 1912.

<sup>2</sup> Die Ausgänge der psychoanalytischen Kuren. Zentralblatt für Psychoanalyse, 1912-13, B. III.

<sup>3</sup> Some Therapeutic Considerations of Periodic Mental Depression. Medical Record, New York, 1918.

<sup>4</sup> The Psychoanalytic Treatment of Dementia Præcox. Report of a Case. Psychoanalytic Review, Vol. 6 (1919), p. 15.

cian sincerity, insight, technical skill, self-control and the capacity to win confidence and control the transfer."

Dooley<sup>5</sup> undertook a study of the manic-depressive group "primarily with a view to determining whether or not psychoanalysis could be applied to the severe cases—with beneficial results." After reviewing with some detail the results obtained in five cases, she concluded that "the therapeutic results of psychoanalysis have been meager and doubtful." She said further on that, "The most responsive cases, so far as my experience goes, among the pronounced psychoses, are those which, for the needs of hospital diagnosis, are cross-indexed between the manic-depressive psychosis and dementia præcox. . . . The counter activity type of defense against the painful complex is not so well developed as in the outright manic, and there is also a better chance of getting consecutive and constructive introspection and thought from the patient." One will notice in the later discussion that our best results were also obtained in this borderland class of patients, a class formerly indexed as "allied to manic-depressive psychosis" or "allied to dementia præcox."

Lazell<sup>6</sup> outlined a plan for the group treatment of dementia præcox. He selected "only such patients as presented the same fundamental problem and were solving their difficulties in the same manner;" he delivered a series of talks to them, explaining the significance of various psychological features, such as the fear of death, the conflicts, regression, homosexuality, hallucinations, etc. Lazell did not regard his patients as recovered, "but all left the hospital later as social recoveries." It seems feasible that certain selected patients should be benefited to some extent by knowledge of psychological processes. In view of the fact that the schizophrenic group comprises such a wide variety of reactions, it is apparent that the intensity of the treatment must necessarily vary; some patients attain a social recovery with partial analysis of varying degree. It is not at all improbable that the schizophrenic group as a whole might show good improvement in the absence of a thorough-going analysis. This is considered all the more probable, since psychosynthesis occupies such an important rôle in this class,

<sup>5</sup> A Psychoanalytic Study of Manic-depressive Psychoses. *Psychoanalytic Review*, Vol. 8, (1921), p. 38.

<sup>6</sup> The Group Treatment of Dementia Præcox, *Psychoanalytic Review*, Vol. 8, (1921), p. 168.



The influence of industrial therapy as an adjunct to psychotherapy is becoming more and more evident with time.

Clark<sup>7</sup> has recently described what he terms the "phantasy" method of analyzing the narcissistic neurosis. The purpose of the method is "to avoid the protective mechanism that lies within every narcissist," and the method itself "is comparable to inducing a mild self hypnosis." Clark claims that "the displaced primary personality of the narcissist is enabled to gain the power of insight into the intricate pattern of the narcissism, which has been built up from the identification with the mother." The patient traces step by step the successive orders of repressions, finally reconstructing "a true picture of the dilemma and he will act upon this new insight just as soon as it is deep enough to release the repressions and fixations." Clark's method is but another indication of the need for a modified approach to suit certain narcissistic types. He has thus far reported on the treatment by this method of melancholia, dipsomania, essential epilepsy, confirmed stammering and "narcissistic neuroses without specific category."

It is well known that the application of Freudian principles is not universally successful in the group comprising the transference neuroses; nor is it by any means universally unsuccessful in the class making up the narcissistic neuroses. To us the terms "transference" and "narcissistic" form working hypotheses; they crystalize conceptions as understood in the present light of therapy, without attempting to define what types of mental reactions will or will not be favorably influenced. They indicate in a general way a factor of prognostic value; yet even as such they are apt to be misleading, as is entirely true of any signs relating to prognosis in any department of medicine. We stress this point because there is an undercurrent of feeling that the large masses of patients seen in our institutions are not amenable to psychoanalytic therapy, simply because on the whole they resemble the narcissistic group. The fact that the libido is turned inwardly in this (narcissistic) group is not in itself a contra-indication to therapeutic measures. On the contrary, in a certain number of cases, we can employ the inversion of the libido, with its attendant relative absence of positive transference, to very useful ends. Before entering upon the

<sup>7</sup> The Phantasy Method of Analyzing Narcissistic Neuroses. Medical Journal and Record, Feb. 3, 1926, p. 154.

discussion as to how this is best done, we should like to consider some factors that help to make this possible.

In the first place, as the title of the contribution indicates, we shall confine our remarks to that large group known as schizophrenia. In our experience the schizophrenic patients who consistently and exclusively exhibit no interests in environmental situations, that is, whose libido is immutably riveted to the self, form the minority. We exclude the latter from present consideration on the score that they are totally unavailable for exchange of conversation. For the present also the more pronounced systematized paranoid reactions are excluded, not, to be sure, because of uncommunicability, but principally because the reactions are as a rule solidly grounded to the symbolic forms of activities. That this is not always so is indicated by the investigations of others; Maeder,<sup>8</sup> for example, reported considerable improvement in two cases of the paranoid form of dementia præcox. One might suggest that among the remaining types of schizophrenic reactions (i. e., the simple, hebephrenic and catatonic) there are to be found patients, who can be benefited by psychoanalytic treatment.

In order that we may have a still more clearly defined picture of the type of reaction that we have in mind, we must remember that many patients, who are not basically paranoid, may exhibit a well-marked, though transitory, mechanism of projection, which mechanism may be from weeks to months in duration. There is in them a fluctuation of libidinal interests, for at times they may be encouraged to fix their interests in environmental conditions, while at other times they are entirely unable to do so. In addition to the episodic paranoid reaction and as a rule simultaneous with it, there is the delusion of omnipotence, generally represented by ideas of Christ or Christ-like importance. These morbid thoughts break through and hold the ascendancy for periods of greater or lesser duration; eventually, however, they subside, leaving the clinical picture that is akin to the simple dementing type of schizophrenia. We do not believe that this type of clinical picture is anything new to schizophrenia; nor do we believe that it is the only type of syndrome that may be amenable to psychoanalysis. We prefer to state that among the various syndromes of schizophrenia we have

<sup>8</sup> Psychologische Untersuchungen an Dementia Præcox-Kranken. Jahrbuch für psychoanalytische und psychopathologische Forschungen, Vol. II, S. 185.

found the condition described in the foregoing favorable for psychoanalytic therapy.

The technic utilized is not the formal analysis employed in the treatment of the transference neuroses; nor is it like the phantasy method of Clark for the treatment of narcissistic conditions. It comprises first of all an accurate and complete account of everything (as far as possible) said by the patient during the acute, episodic stage, with a full knowledge of the setting in which the productions occur. Inasmuch as one cannot gain rapport with the patient during the height of the mental disturbance, one cannot interrupt him for the purpose of inducing in him the meaning of the symbolism. There is occurring in the narcissist an "automatic unwinding of the libido,"<sup>9</sup> which is not in many respects unlike that observable in the transference neurotic. The setting is distinctly different, in that the analyst cannot, as stated above, "intervene and correct at those points where one notices a disturbance in the process in the form of a neurotic resistance."<sup>10</sup> The fact seems to be that there is no resistance in this sense; the patient exposes the conflicts in their original forms. Not only is the conflict laid bare, but it is reacted to (i. e. abreacted) with its original affect. We consider this abreaction as of utmost importance; it is decidedly different from the reaction of the more permanently established paranoid cases of schizophrenia, in which condition the affectivity either is displaced upon the symbolic expression of the original conflict, thus never uniting directly with the latter, or, if it does unite with the original conflicting ideas, it loses the conflicting emotional tones; in other words, the latter is seen in the patient who more or less complacently accepts, for instance, the frankly expressed Oedipus situation. In the syndrome to which we have invited special attention (the transitory, paranoid and omnipotent type), the reaction represents a reappearance in *actual form* of the situation that occurred in the individual at the inception of the conflict and which was then repressed into the unconscious without having been satisfactorily resolved. And the characters of the plot are ordinarily the same. In the case material to be cited reference is made to the actual efforts of a son to kill his father in order to have his mother by himself; also to the

<sup>9</sup> Ferenczi and Rank. *The Development of Psychoanalysis*; p. 6, Nervous and Mental Disease Pub. Co.

<sup>10</sup> *Ibid.*

attempts he made to castrate himself. That means that there is an effort to solve the conflict i. e., the (Edipus plot) by direct expression. Reanimation of the conflict does not, however, comprise the entire syndrome; it is only a part of it; withdrawal from reality appears in pronounced and morbid form; hallucinations of hearing are frequently prominent; the mechanism called projection assumes a minor rôle.

As stated before, during the acute episodic phase our interests in the patient are almost purely observational, that is, from the standpoint of psychological procedure. We should always, however, be on guard for the first appearance of a positive transference from the patient, for sooner or later we may expect him to show an interest in us. This is usually accomplished in response to the indirect methods we employ in the effort to get the patient to reestablish an interest in environmental conditions. Industrial therapy is of much importance; the active cooperation of the physician in the type of work the patient is doing and the manner in which he does it helps tremendously toward the establishment of the transference, that is later to be used as a primary lever in the application of psychoanalytic treatment. As the transference enlarges the psychotic elements begin to assume lesser and lesser importance in the daily activities of the patient. It is the duty of the analyst not to permit the subsidence of the original conflicts until the patient has attained a full understanding of their origin and significance. To accomplish this a more complete survey of the patient's life reactions and experiences is necessary; this comprises chiefly a thorough knowledge of all the features associated with the acute mental episode; emphasis is placed upon the components of the psychotic episode, because they represent the greatest conflicts with which the patient has had to contend. Furthermore, since the patient has always been of the reserved, coy, shut-in type, it is urgent that we make him understand that the attainment of an harmonious career is possible; as a rule, this type of individual feels that he is distinctly inferior in his reactions, that he is morbidly different from others, that he can never live happily as all others seemingly do; it is valuable, not only to advise him of the incorrectness of this attitude, but to take an active part in helping him to establish proper social adaptation.

The duration of the treatment period, it seems, should be longer in the case of the narcissistic neurosis than in that of the transference neurosis. The "ideal" case in psychoanalysis, according to Ferenczi and Rank, is that of the patient who, having been treated, is never seen again. But, the narcissist is far from being ideal. Usually, the type that we have been describing as amenable to psychoanalysis, is young, and inexperienced in healthy, adult habits. Hence, it is not a question of reeducation or reapplication, but is one of new and, therefore, stressful establishment of adult forms of behavior. The analyst should encourage the maintenance of the transference until the best possible stage of adjustment has been reached. This situation carries the analyst a year or two beyond the period of analysis; the transference changes in character as the patient improves; at the start of treatment the patient assumes the rôle of a child to its parent; when the patient is finally dismissed he has the attitude of an adult toward an impersonal adviser.

#### CASE REPORTS

CASE I. Joseph, the patient, age 22, was greatly influenced by the members of the family. His maternal grandmother, a quiet seclusive woman, definitely of schizophrenic disposition, in her late twenties married a widower with four children. Her husband was much older than she. This union had one daughter, who later became the patient's mother. This daughter, Joseph's mother, though brought up with four step-children, at the age of three assumed the virtual rôle of an only child, because upon the death of her father, her mother became disinterested in the step-children and coddled her own child. In order to understand the attitude that Joseph's mother took toward him, we had to trace out her own life history. In this position of an only child she was nurtured with excessive care and, as she grew into womanhood, she obediently accepted the exclusive guidance of her mother. The latter selected the forms of activities in which she engaged, chose her companions and was the quiet agent behind the daughter's marriage.

Joseph's mother was married at the age of 21 to a man who exhibited less initiative than she. He was one year her senior. Neither took much of a part in the culmination of the courtship in marriage; both were prompted by her mother. After marriage Joseph's mother continued to remain attached to her own mother; her major interests did not turn to her husband, nor did his turn to her. When their first child, a boy, was born a great deal of the mother's attention was directed to it, but the father



showed no changes of consequence. During the next eight years the mother-son combination was uninterrupted; then a second son was born; this event allowed the older son to enlarge his interests outside of the family circle, and he did so in a natural, wholesome way. The second son was a weakling until he arrived at puberty, when he changed physically into a strong, robust fellow. The mother identified herself very securely with the second boy and he took the same attitude toward her; in short, the two acted as one. This situation turned out to be particularly disagreeable because Joseph, our patient, who was born three years after the second boy, demanded the undivided interests of his mother. For several years Joseph and his next older brother quarrelled and fought incessantly for priority in the mother's esteem; throughout this period the determinants for Joseph's adult behavior were being crystallized.

From the standpoint of therapy during Joseph's later mental illness, it was urgent to find out all that we possibly could about this period of growth and to evaluate the various factors therein. We came to the conclusion that there were two chief factors operating; in the first place, Joseph was not exhibiting any tendency to outgrow his infantile attitude toward his mother; and, secondly, his mother was making no effort to have him do so. On the contrary, Joseph finally conquered his rival, his brother, and was thereby placed in sole rapport with his mother. The second brother went the way of the first, that is, he attained sound contact with extra-familial affairs. During the early part of the analysis Joseph constantly referred to the opinion that the cause of his breakdown was the undue tender devotion heaped upon him in his youth; he felt that his mother exercised poor judgment in volunteering to do everything for him. His opinion, though, did not represent the whole setting. He had failed to estimate the influence of his demands upon her. He later gained insight into his share of the drama. Situations such as the above represent real problems in psychoanalytic treatment, and unless all angles are soundly investigated the probability of incurring adequate insight is meager. One notices that the gathering of the material comprises a more laborious task than the treatment proper; and that, moreover, the treatment is rational, consisting in the removal of the cause. To be specific, the cause of Joseph's attitude toward his mother, as he expressed it in his psychosis, was definitely traceable to his childhood experiences with her.

By analysis we determined that Joseph's infantile reactions were carried into adolescence, and that the introduction of adult sexuality produced a prominent set of symptoms in him. Since he had directed all his previous thoughts upon his mother, it was to be expected that adult sexual issues would take the same course. And they did. Masturbation was performed with the mother as the first object. Soon he regarded the practice as sinful,

basing his opinion upon religious grounds. Yet he could not divert his interests from his mother. The original conflict forged rapidly to the front. He denounced Catholicism as false and became an atheist. He thus denied the sinfulness of the sexual interest in his mother; later he imagined himself to be Jesus Christ and his mother to be the Virgin Mary, which to Joseph meant a union of the two. The conflict was being solved by regression to the early infantile level, to the stage of all-powerfulness. As he regressed his mother treated him more and more like a baby. He could not have fallen into more undesirable hands, for he was in the midst of the very setting that he had consciously striven to avoid. Then the father was awakened to the boy's plight and tried to help. Joseph manifested extreme anger toward his father and struck him on several occasions. Finally (in June, 1921, when he was 17 years old), he was taken to Bellevue Hospital, whence he was committed to the Manhattan State Hospital.

In the latter hospital he expressed ideas of reference, delusions of persecution and auditory hallucinations. He believed he was Jesus Christ; he spoke frankly of castration, believing that his testicles were to be cut out; he repeatedly asked for his mother; several times he assaulted a middle-aged attendant, the father-imago. In brief, he freely dramatized the Oedipus tragedy. After a survey of all the features of his case he was diagnosed as a case of dementia præcox.

He remained in the hospital for three months (June-September, 1921), and when he left, he was much improved. He expressed insight into the fact that he had had a mental breakdown, but he had no knowledge of the etiological factors in the production of it. One is impressed with the dominance of the real as against the delusional content of the psychotic manifestations. Joseph tried by actual movements to solve the nature of his conflicts; he did not sit idly by, nor did he react by allowing phantastic symbols to take the place of the real situations. This observation forms the crux of the reaction type to which we referred earlier. Besides, the fact that the mental breakdown was episodic encouraged us to apply the psychoanalytic form of treatment. Of course, the episodicity was known only by retrospect.

Psychotherapy, in the form of psychoanalysis, was not applied until his second admission. After he first left the hospital he returned to the old setting. We need not recapitulate his experiences, other than to indicate them by a quotation from his mother. "When he left the hospital I watched him carefully, just as if he were a baby again." Joseph tried during the succeeding 13 months to free himself from the maternal bond, but he was unable to do so alone. Again the conflict was expressed, resulting in his return to the hospital (October, 1922).

The leading features of his case have already been alluded to; it is not

our purpose to give the details of the analysis, but to mention some important items associated therewith. Psychoanalysis was begun almost directly at the time of the second admission, and was continued for about one and one-half years. During that time a thorough survey of his life reactions was made and the results of the findings were reviewed with him in the effort to enlarge his insight. With time he acquired an excellent grasp, that is, excellent insight. At the same time a partial analysis of his parents was taking place and psychosynthesis was instituted. At the end of about two and one-half years the entire situation was cleared up and now for four years he has been out of the hospital. He has in that time become a master tradesman and has developed natural contacts in community affairs. He continues to be a quiet, reserved boy, definitely of the introverted type.

Another point of favorable entrée in the initiation of psychoanalysis comprised Joseph's capacity for developing an interest in the physician. At the start the transference was of the negative type, for the physician served to reanimate the hated father-*imago*; but within a few weeks the transference became positive. About two months after the analysis had begun Joseph began spontaneously to gain insight and gradually during the subsequent months his insight enlarged remarkably well.

The second case to be reported had also regressed deeply to the level of all-powerfulness, expressed by him as the Messianic rôle. One should keep in mind that we are not simply directing attention to recovery in deeply regressive schizophrenic conditions, but particularly to points that are helpful in the early selection of patients, who will probably respond favorably to psychoanalytic treatment and, secondly, to the means by which sound insight can be obtained and maintained. The best proof of the efficacy of the treatment lay in the duration of the recovery period, plus the depth of insight. The first case, Joseph, has now for four years adjusted himself well in the management of his personal and environmental circumstances. The patient, whose history we are about to review in brief, was a full-fledged case of schizophrenia, who recovered and who has been peacefully adapted now for five years.

CASE II. Max, the patient, was born in Poland; the family history on both the maternal and paternal sides was characterized in general by a high degree of intelligence, which was applied in the main to devout religiosity. The antecedent background was highly colored with the "shut-in" type of personality and hypochondriasis was prevalent. Of immediate interest to the patient's career was the perpetual attention paid by both parents to alleged physical ailments. In fact, in the triad, mother, father and children, there were principally two objects of interest, first, their physical condition and second, religion. The environment played an insignificant part in their lives. Max has two brothers and a sister older than he and one

sister younger; each of them exhibits neurotic elements to a greater or lesser degree.

The patient grew up in an atmosphere laden with hypochondriasis and orthodox Hebraic religion. Moreover, he soon proved to be a replica of his parents, conforming readily to their standards of interests. Throughout childhood he was energetically schooled in the Talmud, having received instruction in the synagogue and especially from his parents who spent long hours with him at home. He was taught to deny the diversions enjoyed by boys of his age and to direct his attention to the mastery of Talmudical affairs. The Rabbis smiled complacently upon their assumed successor, when often he delivered long, accurate discourses from the Talmud and the Bible. He confined his interests to religious studies until he was nine years old, at which age he came to America with his parents and thereupon entered the public school system in New York City. He was an apt student, but he was keenly dissatisfied with what he regarded as the barren pleasures of the average child. He was in tacit revolt with the new state of affairs and after four years (age 9-13) of intolerance to the new order, he retreated to orthodox religion. He was unable to identify himself with real community activities; furthermore, he was urged into seclusion by his parents and former (religious) associates. At the age of 13 he entered a Rabbinical college, but quit after one year's study. The underlying occasion for his severance of exclusive devotion to religion comprised the changes in his attitude attendant upon puberty. The sexual issue faced him sternly and he felt that it was not to be denied by a simple gesture. He therefore made an attempt to meet reality; toward this end he reentered the public school system and tried to act as his classmates did; among other things he made feeble, unsuccessful approaches to girls of his age. He experienced much difficulty in his renewed field; he suppressed the sexual desires to an appreciable extent, replacing them by gastro-intestinal hypochondriasis, one of the modes of escape inculcated in him in childhood. Hypochondriasis was, of course, not then understood as possessing a substitutive or symbolic meaning.

At the age of 15 he again sought refuge in religion, having returned to the Rabbinical college; but by this time he had regressed to a puerile level and therefore attended to formal study very irregularly. He spent the greater share of time in his home, assuming practically the same attitude toward his parents as he had when he was a child. His seclusiveness heightened and with it there developed intensification of hypochondriacal interests. Parental attention increased proportionately; he encouraged his mother to be with him, but he violently drove his father away. Within a short period (he was then 19 years old) he began to masturbate openly in the presence of his mother. This is one of the most direct references that

we can make to support the claim that in a large number of cases adult sexuality is directed to the parent of the opposite sex, the parent who has through the years of childhood been the object of emotional gratification.

When the parents realized what such behavior meant, they directly laid plans to remove his interests from them. But he was too securely conditioned to the infantile form of behavior to respond satisfactorily to a sudden thrust into reality; it is not at all difficult to understand why it was that he regressed to a still deeper level, when his parents forced him to the point of marriage. They bargained with a neighbor for the marriage and willingly waived the dowry rights.

By this time the patient gave vent to the full-blown Oedipus drama. He asked his mother to participate in sexual intercourse with him; he exposed himself and masturbated in her presence; he engaged her in a physical encounter, as he attempted to gain his goal. He had already denied the existence of his father. The climax of the Oedipus plot was reached when he made actual attempts to castrate himself.

He was committed to the Manhattan State Hospital on January 4, 1922, when he was 22 years old. He spoke of his special mission on earth, namely, that he was soon to be the king of the Jews, the Messiah; and, a woman, the mother-imago, was to be the queen. He hallucinated freely with regard to this delusional trend. There was a distinct inappropriateness of affectivity. The sensorium remained clear at all times.

It was noticed that, though the trend reaction was foremost, he showed an interest in the physician that did not enter the trend proper. It was the kind of transference described by Kempf as altruistic. He said he felt relieved because someone was taking an interest in him. With that statement as an entering wedge, the transference was gradually enlarged. Step by step he began to understand the meaning of the situation he was in. After three months of analysis and synthesis he was paroled from the hospital. He was then appreciably improved, but the necessity of further treatment was obvious. Many conferences were held with the parents throughout the period of analysis and their attitude toward him, as well as toward their own lives, was modified to conform with the plan for rehabilitation of family harmony. He was supervised by the physician for about two years, during which time he was first reunited to his parents at an adult level and later he was induced to extend his interests also in extra-familial activities. He has been out of the hospital now for five years; he has good insight, not only into his past, but also into his potentialities for future adaptations.

We have tried to guard against the probable error of attributing to our efforts results that might have been attained without the introduction of psychoanalysis. We have in mind the results of the



investigations of Strecker and Willey,<sup>11</sup> who, in a study of 1,000 consecutive admissions to the Pennsylvania Hospital, found 187 cases of dementia præcox; of the 187 cases, 25 (13.3 per cent), were regarded as having recovered, this without the intervention, at least, of psychoanalysis in an applied sense. Moreover, we should be aware of the fact that in our State hospitals there has been within the past few years a steady increase (in the schizophrenic group) of patients reported as recovered. However, no explanation has as yet been given as regards the factors involved in the recovery. One might cite case material to show at least some of the factors, that operate in bringing about recovery. Not infrequently patients develop a well-marked transference to some member of their environment—to a nurse, attendant, occupational therapist, or, perhaps, to another patient. They may thereby “spontaneously” improve, if by the term “spontaneous” we refer to the absence of therapeutic means in the hands of the physician. A more careful study of the means by which patients recover will undoubtedly reveal the presence of highly important factors. For example, the presence on one of our Institute wards of a middle-aged, woman nurse, who had a kindly, maternal attitude toward the patients, was of much assistance in bringing about a progressive improvement in many of the patients. She represented the mother-*imago* to them. When the physician recognizes the bearing of such a situation, he possesses excellent means, by which he may continue to aid the patient in further development. In order that he may render maximum assistance, we feel that the physician should have knowledge of the principles developed by psychoanalytic methods. Institutional physicians would do well to have such a book as Flügel’s “Psychoanalytic Study of the Family” for ready application of its principles. It appears that physicians have not been as alert in the understanding of those therapeutic measures that are not applied in a more or less personal manner by them, as they have been in the understanding of the measures that they personally institute. Because this is so, it does not by any means indicate that the former items are of lesser importance.

We are of the opinion that the application of psychoanalytic knowledge to patients with schizophrenia has a definite place in

<sup>11</sup> An Analysis of Recoverable “Dementia Præcox” Reactions. *Am. Jour. Psychiatry*, Vol. III, No. 4, April, 1924.

the therapeutic armamentarium of the psychiatrist. We believe that the patients, whose clinical histories have been briefly presented, were materially elevated in personal and social adaptation by means of this form of treatment. In order to estimate the value of any form of treatment in cases of this type a considerable period of time must, of course, elapse. However, the results obtained in a group of patients observed now for 4 to 5 years has convinced us that many schizophrenic cases can be definitely benefited by the individual method of approach here described.

## SOCIOLOGICAL LANDMARKS IN THE DOMAIN OF EPILEPSY\*

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A convulsion, no doubt because of its alarming appearance, early made an impression on mankind. Even in our day the majority of persons, including many physicians, fail to appreciate that the essential symptom of epilepsy is a disturbance or loss of consciousness thus including many types of seizures other than severe convulsions. There are many normal gradations of impairment or loss of consciousness, e. g., absentmindedness, sleep, etc.

The laws of heredity are not sufficiently well established scientifically to warrant the making of a positive assertion that epilepsy is frequently transmitted from ancestor to descendant. So far as investigations go the seeming transmission of a tendency toward epileptic reaction occurs in a comparatively limited number. In the great majority of epileptics there is evidence of sufficient having occurred subsequent to conception to lay the foundation for the later appearance of phenomena of epilepsy. Again it must be borne in mind that convulsive phenomena occur in several states other than that designated as epilepsy. All of the foregoing must be considered when viewing epilepsy from a sociological standpoint.

One must consider the various conflicts and stresses of life, both physical and mental, and their relation to the adjustment of each individual to his particular environment. Many an epileptic appears stubbornly determined that his environment be made to conform to himself instead of, as with the normal individual, trying to adjust himself to it, or if such cannot be easily brought about, seek a different one.

An individual attack, or even a series, may apparently be brought on or precipitated, or on the other hand, held in abeyance or repressed, by emotional reactions.

Witnessing attacks in others does not render an epileptic any more likely to have an attack himself; on the contrary, familiarity with seizures often encourages the patient to consider himself less afflicted than his neighbors. It is commonly observed that many epileptics look upon their ailment as a matter of great importance

\* Read before the National Association for the Study of Epilepsy, Richmond, Virginia, May, 1925.

not only to themselves but to others, and even some of the most intelligent among them in spite of accidents and warnings never appreciate the necessity for seeking to avoid situations that are dangerous, or not to undertake work and assume responsibilities that they cannot possibly carry out, thus showing what is called "epileptic optimism."

One hears a great deal about violence, anger and homicidal acts of epileptics. From my experience, I believe that this has been unduly stressed, and exaggerated, as the epileptic who presents active homicidal symptoms is rather the exception than the rule. While many are prone to complain of various symptoms, much as does the hypochondriac nevertheless, marked depression with suicidal tendencies is infrequent. The epileptic is, in the majority of instances, inclined to look forward to restoration to health.

Education of the epileptic child should be furthered as well as conditions permit. While with many there is limitation to the possibilities along educational lines, nevertheless with no small number school work, not only is indicated as with non-epileptic children, but tends to afford normal outlets. Many epileptic children have potential mentality which permits of their taking satisfactory advantage of educational opportunities, not only with hand work but also academic studies, thus assisting in general mental development as well as tending to ameliorate their disorder and prevent mental deterioration. Furthermore, if afforded school opportunities, habits of discipline will be inculcated, interests aroused and developed, self-control acquired and encouragement given so that a feeling will not be had of great difference from other people. Due consideration must be given to the length of school periods, and proper estimation of the ability of the individual child to carry on the particular branch of school work. Naturally, in many communities, epileptic children are avoided by other children both in school work and at play, and experience no sympathy from older persons with whom they come in contact. Being able to go to school brings confidence to the particular patient, and this frequently has much to do with effecting a material improvement in his general health. Too solicitous care often forces upon epileptic children invalidism, both physical and mental, making almost certain mal-adaptations, retarded development and subsequent deterioration.

Value of a rhythmic life for epileptics, their time being so

arranged as to provide for industrial pursuits, in the way of occupation, for dancing, games, etc., in the way of recreation and regular hours for rest have often been stressed. While within reasonable restrictions, such a mode of life is demanded for all who wish to maintain a good standard of living, the need is emphatic for the epileptic.

Marriage should be discouraged, not only because of the possibility of transmission of a defect to offspring, but on account of the deterioration resulting from too heavy burden of family life, frequent desertion, especially by husband, extra burden thrown on the family and community, etc.

Of fundamental importance in the treatment is to secure the hope and confidence of the patient. Frankness, with tact and discretion, is perhaps paradoxical. The patient must accept the fact that actually his seizures are but passing episodes, the important thing being his real self, a human individual. Free discussion must be had with him, especially in an effort to impress on him a reasonable viewpoint of the entire situation. He should be made to understand why it is necessary to follow rules of hygiene and diet, why recreation means more than simply passing of time in a pleasant manner. The patient must realize the value of occupation, physically, mentally and morally, appreciating the fact that every normal person must follow some pursuit in order to continue in health. New interests must be aroused, opportunities given for more out-of-door exercise, more active use of the muscular system developed and interests sustained in pursuits. The rights of others must be respected when advising or selecting an occupation.

Oftentimes it is found upon study of the particular patient that there has been deprivation of some of the ordinary opportunities for energy outlets. Unless there is good reason to forbid, the patient should be allowed to participate in the doings of his circle. I have found even in those of a high grade of mentality, that by reposing confidence in and exacting a certain amount of responsibility, much benefit resulted.

The feeling on the part of the patient that he is a person set apart from relatives, friends and associates has a bad influence on mental functioning and in turn on metabolic processes. We all appreciate what close relationship exists between these. The less



one departs from the routine of a normal healthy life and the fewer restrictions made, the better it is for the patient.

As we have seen, the epileptic because of his symptoms is sometimes looked at askance and has no assurance of being allowed to pursue, with due consideration for his condition, the mode of life of his brother in the community. Children, especially, who are epileptic are the cause of much anxiety and worry in the family, partly due to witnessing seizures, especially when these are severe convulsions, partly to the possibility of complications and injuries occurring during the symptoms, and partly to the child's being prevented from normal participation in the activities of childhood, especially so far as it pertains to play, school work, attending church, entertainments, etc. There is always an undercurrent of embarrassment due to the prevailing ignorant prejudice against nervous and mental patients.

The legal responsibility of an epileptic and his treatment outside of an institution depend on his mentality. In a recent publication, it was stated, "Epilepsy is not associated with an abnormally high proclivity to seriously criminal conduct. It owes some of its unfounded reputation to the tendency to ascribe to epilepsy a large number of anomalous mental states which may be due to quite other causes." Proof that an offender suffers from epilepsy does justify the inference that the alleged amnesia of the crime is genuine. On the other hand, the epileptic may, of course, as any one, commit a crime with full consciousness of what he is doing, and then seek to escape punishment on a false plea of automatism. One must establish in these cases the fact of seizures occurring and also automatism. A grave act may be committed while automatic and the epileptic emerging therefrom, finding out what he had done, acts quite normally in seeking to cover up his crime and escape, or attempt to do so.

I do not wish to give the impression that any considerable number of those who are epileptic or mentally defective are primarily or essentially delinquent, immoral or asocial. Most of those who do show such tendencies have oftentimes become so because of early environmental circumstances and neglect, over which they naturally had no control. A few of this type, of course, as among those of normal mentality, persist despite every opportunity, in conduct contrary to all moral or social usages. Those outside of institu-

tions should realize that it frequently becomes necessary to prevent nervous and mental cases being taken advantage of by individuals posing as normal. As has so frequently been explained by those familiar with sub-normal individuals, the great majority, if their mentality is not too defective, can, if the community will make reasonable allowance, get along quite satisfactorily in the every-day world.

It is too often forgotten that in many respects the epileptic does not differ from other persons.

Because of the various conditions referred to, an epileptic then is an individual who has limited power to meet the various stresses of existence. The situation to be met in the treatment is so far as possible to find and remove, where such can be accomplished, irritating factors that put upon the central nervous system hardships too great in amount for the individual to meet properly. A lowering of these influences to the level on which the nervous system can properly function, is of course, oftentimes difficult, and in long-standing cases impossible but in many patients much can be accomplished.

It has been demonstrated, upon investigation made in various parts of the country, that a considerable proportion of adult epileptics of better mentality would be able to live fairly well as wage earners, and accomplish vastly more than the majority of people think possible, if the general public would appreciate the fact that many are incapacitated but for brief periods, and would make allowance for these interruptions in conscious life. It has been well said that many are obliged to accept work which is not congenial and often far below their capacity and that the length of their service depends more upon infrequency of seizures than it does upon efficiency or character of their occupation. Too often the unfortunate epileptic of better mentality is relegated to unskilled labor, even in this capacity he is buffeted about from place to place when his seizures occur. If employers and fellow employees could be made to look upon him in a different manner, be a little patient and sympathetic, one might say human, the problem of adequate provision for many an epileptic would be well solved. There is no doubt whatever that the epileptic of better mentality who has to maintain himself and often others, has his condition made worse by constantly worrying over the difficulty of obtaining and retaining a position.

In the institution for epileptics, every possible means should be utilized for securing the best classification of patients, so far as sex, mentality and age are concerned. The highest standards of medical and nursing care should be sought for. An institution of this kind should be made as home-like and attractive as funds will permit of. More than shelter and ordinary custodial care should be considered. Segregation of patients in small families permits of a classification that is essential to their comfort and happiness. The placing of patients in small compatible groups makes for lessening in frequency, if not for inhibiting of many seizures. A minimum of irritating factors certainly makes for peace of mind and health.

When consideration is being given to sending an epileptic to an institution, he or she should be fully advised of the reasons for taking such step. Sometimes relatives or friends inform prospective patients that a very brief period of residence in an institution will restore them to perfect health. This is done because of lack of knowledge on the part of those interested that the symptoms of epilepsy are often indicative of an extensive disorder in the make-up of the particular individual.

In bringing about readjustment of the mode of life of the epileptic, it is necessary to analyse carefully the symptoms and individualize any treatment along lines of common sense; undue worry, embarrassment and distress tending to provoke rather than to bring about an abeyance of his symptoms. While in many cases it is impossible to readjust entirely and change the mode of living, let alone environment, nevertheless, many circumstances or habits which act in an injurious way on the individual epileptic may be diminished. The particular patient must be considered as a whole and not solely as a person presenting convulsions or other types of seizures.

Even in the institution, it is impossible to eliminate accidents and injuries. Subject as all epileptics are to abrupt attacks of impairment or loss of consciousness and falling, oftentimes without any warning, an accident may result even though a nurse or an intelligent patient is in the immediate vicinity of the patient having the seizure.

The discipline of institutional life is especially valuable for many epileptics who have been unfortunately allowed their own way irrespective of consequences. Recreation, both physical and men-

tal, occupation, and rest in proper proportion are required and are primarily part of treatment. Unfortunately, many patients have been badly advised regarding these particular phases of treatment.

I am optimistic enough to believe that persevering study along lines of clinical, physiological, histological, pathological and psychological investigation will eventually throw much light on many unsolved problems in relation to epilepsy, although complete elucidation will doubtless require methods now unknown. Research workers should be assisted especially in pushing the study of the chemical changes occurring in the metabolism of epileptics. Each state colony should, when possible, have a good working laboratory for conducting these investigations in a systematic manner.

When funds and facilities are available, an institution caring for epileptics should be empowered to hold clinics within reasonable distance of the institution, where epileptics can receive examinations and advice. Patients on leave could be interviewed and former patients looked after. Certain advantages could be obtained, not only for the individuals mentioned, but also for the community.

An institution for epileptics should be provided with means for receiving for temporary observation patients presenting symptoms suggestive of epilepsy, but in whom a positive diagnosis cannot readily be made unless closer supervision is had over an extended period.

## PSYCHOSES OF THE AMERICAN INDIANS ADMITTED TO GOWANDA STATE HOSPITAL

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The Gowanda State Hospital directly adjoins the Cattaraugus Indian Reservation of the Senecas, 21,000 acres, which has a population of between 1,200 and 1,500. The Allegany Indian Reservation, near Salamanca, is only thirty miles away and has a population of 1,000. The latter reservation, on each side of the Allegany River, is forty miles long, one-half mile wide, and has an acreage of 30,000.

All cases of American Indians and half-breeds admitted to this hospital have been reviewed. This was undertaken some years ago but put aside, as it was thought at that time that little of value would result. In view of the recent interest shown in general paralysis among American Indians and the paucity of literature regarding their psychoses, it seemed worth while to continue the study. Some years ago when our cases were first being reviewed, many letters were written to hospitals having a large number of Indian patients, or exclusively for Indians, asking for data, as classification of psychoses, what types of mental disease predominate, their experience as to the prevalence of manic-depressive psychoses, dementia præcox, general paralysis, epilepsy, etc. The answers were uniformly disappointing, meagre, and practically without value, showing that little or no study had been made of the material. In an article read at a meeting of the American Medical Psychological Association, Atlantic City, May 14, 1912, Dr. H. R. Hummer, superintendent of the Asylum for Insane Indians, at Canton, South Dakota, made some interesting general comments on insanity among Indians. He estimated the ratio of the insane as 1 to 1,000. He claims that an unusual percentage of the Flathead Indians of Montana develop epilepsy and insanity on account of their custom of binding the heads of infants to make them flat, from which custom they receive their name. Reservations in the west are so extensive that many insane cases do not come under the care and observation of physicians. Some are treated by their own medicine-men. Many physicians in the Indian service are not trained in



psychiatry. Dr. Hummer's records were recognized as unsatisfactory, but he mentioned nine types: Dementia præcox; epilepsy; mental deficiency; manic-depressive, alcoholic, senile, and sclerotic psychoses; hysteria and paranoia, referring without data to previous cases of paresis. Etiology refers often to heredity, alcoholism, epilepsy, domestic difficulties.

Certain difficulties confront the investigator. First, many patients were admitted before full case-taking and routine Wassermann; second, Indians in general are more reticent and stolid, not so accessible as whites. The picture may be obscured, also, by the admixture of white blood, although the Indian features and characteristics invariably predominate. Certain mental traits of the Indian, perhaps pagan and atavistic beliefs, color the psychoses. Hallucinations and reference to spirits apparently occur more often in benign psychoses of Indians than of whites, perhaps due to their superstition and beliefs.

Some Indians are modernized by the excellent Indian school on the Cattaraugus Reservation and by education at Carlisle and other schools, but nevertheless it is a well-known fact that they readily revert to conditions which would seem insufferable to an educated person. More can be done with children than adults, but a deep impression is not made, as they are reluctant to accept new ideas. Their mode of life is insanitary, often an entire large family is crowded into a one or two-room shack—ill-ventilated, dirty, with such gross errors in feeding that child mortality is high. Tuberculosis and syphilis are prevalent, but no cases of trachoma have come to our notice, except possible residuals in one case. Intemperance is the rule. Some Indians are Christian, many pagan, with all their old forms of worship, rites and ceremonies, as the green corn dance, a thanksgiving for the harvest, the pagan new year, the special ceremony and prayer when putting seed in the ground, that it may come forth abundantly for their benefit. They worship God but largely through nature, sun, moon, stars and all that grows.

Indians seem especially susceptible to tuberculosis, pneumonia, and smallpox. Statements as to the increase and decrease of Indians and their health conditions seem variable. Violent deaths by murder and accidental deaths due to profound intoxication are not infrequent, Indians often being killed by trains or autos while intoxicated. Unfortunately, prohibition has not been of assistance,

as they obtain dangerously toxic beverages, sometimes fatal. Of our cases, 12 are known to have been intemperate, and 9 to have had syphilis, and there is no doubt that others had had it, but were admitted before the Wassermann test was used.

The names of Indians are picturesque and expressive, as Two-guns, Tallchief, Bluesky, Silverheels, Half White, Redeye, Warrior, Killbuck, Conjockerty, Cornplanter, Turkey, Turkeytoes, etc.

Since the opening of the hospital, August 9, 1898, 26 cases have been admitted, 12 men, 14 women. Of these, 3 men, and 5 women were readmitted. The classification of the 26 cases is as follows:

	Men	Women
General paralysis .....	2	..
Alcoholic psychoses .....	2	..
Psychoses with other somatic diseases.....	1	1
Manic-depressive psychoses .....	4	11
Dementia præcox .....	1*	1**
Epileptic psychoses .....	1	..
Psychoses with mental deficiency .....	1	..
Not insane, epilepsy .....	..	1

\* Man—part negro.

\*\* Woman—with white admixture.

Seventeen were full-blooded Indians. Eight had an admixture of white blood, 1 of negro blood. Of the full-blooded, 10 were manic-depressive, 2 alcoholic, 1 general paralysis, 2 psychoses with other somatic diseases, 1 psychosis with mental deficiency, 1 epileptic psychosis. Of the 9 half-breed, 5 were manic-depressive, 2 dementia præcox, 1 general paralysis, 1 epileptic, not insane.

In the hospital at present are 2 women, a chronic manic, full-blooded, and a half-breed catatonic præcox, and 2 men, an Indian-African hebephrenic præcox, and an epileptic, full-blooded, with none on parole.

The manic-depressive group is the largest, and of this it is interesting to note that three brothers and one sister from the same family were all depressions, although the woman, L. S., had a mixed manic attack when readmitted the third time and frequent hypomanic attacks later, during which she was never readmitted. She was admitted to Utica in 1875, aged 22, in a typical manic attack and remained well after her discharge, until 1909, though noted as

overactive and an indefatigable worker. She was three times in this hospital, twice voluntarily. The etiology in the first two attacks was grief from death of her mother and adopted daughter, in the third from excessive overwork. She died from an accident, falling over a railroad embankment, there being no suspicion of suicide. Although typically Indian in features, the paternal side had white blood. Her brother, H. H., was here twice, once voluntarily, at both admissions, depressed, but had one manic attack, not in a hospital. Alcohol was a factor in the etiology. He died of tuberculosis after his discharge. A brother, A. H., a depression, was over-religious, alcoholic, had had syphilis. He made a good recovery and has remained out six years. Still a third brother came voluntarily, depressed, having had many previous attacks of depression with suicidal thoughts. He was suffering from tuberculosis but recovered mentally and has remained well for over four years. Their family history shows many alcoholics and deaths from tuberculosis. Our patients were all noted as generous, kind, and helpful in the community. The woman had brought up seven children who had no claim on her. They were descendants of a great Seneca chief. Some other members were peculiar, erratic, nomads, etc.

Wherever a family history can be obtained, tuberculosis is common, also alcoholism and syphilis. There is almost universal neglect of teeth, which are in consequence very poor. Only three patients were admitted in an actively tuberculous condition, but several had chronic or arrested tuberculosis. Six were voluntary admissions, three having been committed in the past, coming voluntarily the second time. Etiology in the manic group:

Death of a child or mother .....	3
Ill health and operation .....	4
Desertion by husband .....	3
Childbirth .....	1
Attack of influenza .....	1
Alcohol .....	3

Alcohol also was a factor in one other case.

Etiology outside of manic-depressive group:

Alcoholic psychoses .....	2
Psychoses with other somatic diseases .....	2
Dementia præcox, etiology unknown .....	2

In the one case of psychosis with mental deficiency, alcohol was a factor; in the one epileptic psychosis chronic alcoholism was the alleged cause.

*Heredity:* The Indians have a habit of living rather promiscuously with first one, then another woman or man, and it is therefore not easy to trace accurately the heredity. In the cases where a reliable history could be obtained, it was found among the manic-depressives that one case had a feeble-minded, epileptic mother, one had several insane relatives, the family group of four had an insane niece, nephew, and an insane maternal uncle, one had an insane brother and sister, one had an insane maternal aunt, one an insane epileptic uncle and three insane aunts, all maternal (Indian). Intemperance was the rule in several members of the family, in nearly all cases. Heredity could not be ascertained in eight cases and was absolutely denied in four. Two cases gave a history of having had a relative die at 45, after a stroke, with symptoms strongly suggestive of general paralysis. It is interesting to note that one case of general paralysis (full-blooded) had an insane maternal uncle and the other, who had some white blood on paternal side, had two maternal uncles insane.

*Trends:* Many saw and talked with their dead relatives and heard their voices, saw angels or evil spirits. Of the manic-depressive group nine expressed ideas of this nature. The trend in all the psychoses was often of a religious nature, a desire to preach to their nation, or grandiose ideas of being great chiefs, triumphing over the white race, regaining all their territory, raising the dead by religious power, etc. Several spoke of seeing their father at the bedside, Christ, the cross, the crucifixion, spirits of the dead, heard angels calling on bugles. Several had erotic and obscene trends. The Christian Indians had ideas against the pagan Indians, that they were bewitching their children, setting fire to their houses (a favorite means of revenge among the Indians) yelling "fire, fire." Three manic-depressives were practically mute for weeks.

Of the manic group all but one expressed good retrospective insight and appreciation of their condition. The eight manics under observation since discharge have remained well respectively 4, 6, 8, 11, 12, 13, 13, 18 years. The mental defective, twice admitted, has worked steadily for the 10 years since discharge, without a recur-

rence. The two manics have not been heard from in five and seven years respectively. Of the manics six were readmissions, three voluntarily. Two were admitted twice, two three times, one six times, and one who was first admitted February 7, 1901, and discharged September 3, 1901, at the age of 22 was not readmitted until June 22, 1922, shortly after confinement, and is still a patient, very unstable. One first admitted to Utica in 1875 remained well till July, 1909. The first attack being due to the death of her mother, the second to the death of her daughter. It may be worthy of mention that our Indian patients have been almost universally appreciative and grateful, speaking well of their treatment, showing affection for nurses and physicians years after their discharge, some bringing gifts of fruit and baskets, some calling or writing to the hospital for help and advice. In this way, we have kept in touch with most of them.

Of the two psychoses with other somatic diseases, one died in a few days from tuberculosis, one was discharged improved in three months. He had been very ill and developed a delirious trend of worms in the bed, poison in his wife's clothes, turned against her because he felt that he was doing wrong in living with her, unmarried, said he had become religious and when leaving the hospital refused to return to her.

The two acute alcoholic hallucinoses were perfectly typical, one was discharged 20 years ago, and not readmitted.

Of the two cases of dementia præcox half-breeds, the negroid male is a typical hebephrenic, but the catatonic female at the first onset of the psychosis began to sing loudly in a Billy Sunday meeting and for days sang "Brighten the Corner Where You Are," was elated, happy, over-religious, flighty, later assumed catatonic attitudes in the form of a cross, praying, in a religious ecstasy. She developed typical *flexibilitas cerea*, negativism, mutism, etc., and after over 10 years is idle and deteriorated. Her mother recovered from a psychosis, a maternal uncle had epileptic psychosis and died in the Buffalo State Hospital, three maternal aunts and a paternal cousin were insane.

The patient with epileptic psychosis has had syphilis and was alcoholic, but spinal Wassermann was negative.

The epileptic without psychosis, a voluntary case, was a grand niece of one of the cases of general paralysis and came from an



excellent family. She developed epilepsy, chiefly petit mal, after the birth of her first child. She had a defective brother. Considered very bright, she had three years in Hampton Institute but was there told that her temperament was not adapted to teaching. She developed a dislike for one child and a feeling against her family but was not insane and was discharged.

Four patients have died here, two men and two women. One chronic manic, admitted six times, died of cerebral hemorrhage, one case of psychosis with other diseases, died a few days after admission, of pulmonary tuberculosis. Two male cases died of general paralysis. Two manic-depressive cases have died since leaving the hospital, one by accident, one of pulmonary tuberculosis.

The American Journal of Psychiatry, July, 1926, has an article on general paralysis, Among the North American Indians, by Adams and Kanner.

In this article the authors quote from Kræpelin's monograph on general paresis his statement that the Brazilian Indians apparently do not have dementia paralytica, while the North American Indians who are gradually dying out in their reservations, suffer severely from it. More than a dozen years elapsed in which the authors found no authenticated case of paresis in a North American Indian. In April, 1925, the authors informed Kræpelin that the Yankton State Hospital had an almost full-blooded Indian who was suffering from general paralysis.

H. R. Hummer, superintendent of the Asylum for Insane Indians, Canton, South Dakota, writes of four cases probably general paretics, but no serology is mentioned nor was autopsy done. Dr. Hubert Work, Secretary of the Interior, says that general paralysis is exceedingly rare, even among those tribes that are known to be more or less syphilitic. At that date the data collected by the Commissioner of Indian Affairs showed no case reported.

Dr. H. A. Bolton, Superintendent of Montana State Hospital, Warm Springs, Montana, mentions two probable cases (one a transfer from Canton), neither case coming to autopsy.

It appears that Indians are opposed to Wassermann and to autopsy. The authors explain the relative absence of general paralysis among Indians by the old age of syphilis in the race. That is, that a great resistance against neuro-syphilitic manifestations and general paralysis has been acquired. They conclude that syph-

ilis was imported from America to Europe at the time of the discovery of America and that if the spirochete loses the power of producing general paralysis in that race where it has prevailed long enough, there are prospects that the white race may finally gain a similar resistance, so that in future general paralysis may decrease and finally disappear.

Perhaps of greatest interest are the two cases of general paralysis. The first case, S. P., admitted in 1908 was readmitted twice thereafter, because of the expiration of his elopement parole (brief in those days) and his wife's refusal to return him. He was in an over-active hyper-religious state, exhorting, praying, God told him to give his message to the world. He was 43, with some white blood on the maternal side, two maternal uncles were insane. His father was a descendant of noted Indians and one paternal uncle was a military secretary to General Grant. Paternal heredity denied. The history shows that he was very healthy, no illnesses in youth but malaria and measles, which so affected his eyes that he did not go to college as intended, but graduated from an academy. His make-up was very quiet, fairly monosyllabic in conversation, hence failed as a book-canvasser, but was a more successful farmer than his neighbors and laid by money. However, he had always been an excessive drinker and acquired syphilis in 1893. The onset of the psychosis was characterized by grandiose ideas, as that he had an invention which would bring him a million a year, that he could accomplish impossible things in healing and raising the dead. He prayed and talked incessantly, claiming to have saved many of his neighbors. On admission he had a scar on the fraenum and glans, unequal and sluggish pupils, tremors of face, tongue and hands, increased knee jerks, aortitis, slight speech defect, but his memory and retention were good, speech and letters showed education. He escaped, by removing a grating at night, leaving a dummy in his bed. While out he purchased a wagon-load of useless articles, tried to restore a dead cow to life, dressed in full Indian costume, armed with a scalping knife and entered the Indian School. On his return he was more unsteady in gait, viciously assaultive, vision and hearing became defective, pupils fixed and contracted, writing and speech defect more marked, he was markedly obscene in language, letters and conduct, masturbating incessantly and shamelessly. Lumbar puncture December 6, 1909, showed marked

increase in pressure and a notable lymphocytosis. He became deteriorated, memory and retention greatly impaired, confused, disoriented, always with expansive ideas, full of plans to make money, to write the plot of a wonderful play, etc. January 27, 1916, he began to have convulsions, from 10 to 19 daily till his death February 6, 1916. Autopsy was refused.

The other case of general paralysis was of the tabetic type, occurring in a full-blooded Indian admitted May 3, 1919, dying August 13, 1919. He was 58 on admission, single, high school graduate, and had been practically helpless for four years, soiling and wetting, unable to walk or articulate an intelligible word. He had had two hemiplegic attacks, recovering from the first. Alcoholism was denied. There was a history of an illness with "sores" in 1909, and there was marked scarring of the tibiae and body from syphilis and of the neck from tuberculous adenitis. Relatives claimed not to know that he had had syphilis. Wassermann of blood and spinal fluid 3+, cell count increased. He was devoid of mentality on admission, had irregular sluggish pupils, practically absent knee jerks, ascites and military tuberculosis of the peritoneum. This case came to autopsy, which showed: Wasting of frontal lobes, especially over base, pia milky, brain soft, granulations of floor of 4th ventricle. Weight of brain 40 oz. Cerebro-spinal fluid markedly increased in amount, old ulcerations and scars at root of aorta. Ascites, miliary tuberculosis of entire peritoneum covering intestines, stomach and spleen and omentum. Amyloid spleen, hypertrophied heart, chronic myocarditis, mitral insufficiency. Acute miliary tuberculosis was reported as the primary cause of death with general paralysis as a contributory cause. A maternal uncle was insane, had a stroke in the early forties and died in much the same condition as the patient, but outside a hospital and no further data was obtainable.

Conclusions cannot be drawn from so few cases, but there is a striking preponderance of manic-depressive psychoses, few alcoholic psychoses considering the general habit of alcoholism, and a noticeable lack of dementia præcox. As before stated, auditory and visual hallucinations in the benign psychoses seem more prominent than in white patients.

Bibliography: American Journal of Psychiatry, Vol. 69, Part 2 (1912-13). Insanity Among the Indians, H. R. Hummer, M. D., American Journal of Psychiatry, July, 1926, Vol. 6, pages 125-133. General Paralysis Among North American Indians, G. S. Adams and Leo Kanner.

## OCCUPATIONS FOR THE TUBERCULOUS INSANE\*

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Just as in other types of disease, it is imperative that the occupational therapist dealing with tuberculous persons should know something of the nature of the disease itself, as well as of the methods of the cure and treatment of persons suffering from it.

This is not a suitable occasion for it, nor can I, as a layman, attempt to deal with the nature of tuberculosis, but I have procured a supply of a popular exposition of the subject, "What You Should Know About Tuberculosis," published by the National Tuberculosis Association, and I hope that each member of this Institute will take a copy and read it at leisure. I regret that two other documents, each of which dealt with the subject in a more comprehensive way for our present purposes, are both out of print. I refer to a reprint of a series of lectures by Dr. Joseph Walsh, of Philadelphia, that appeared in the *Journal of the Outdoor Life* in 1923, and Bulletin No. 59, published by the Federal Board for Vocational Education, entitled "A Tuberculosis Background for Advisors and Teachers." I think it is likely that some copies of the latter may be in the libraries of some of your hospitals, as the Bulletin was widely distributed to all institutions where ex-service men were under treatment.

It is necessary, though, to review briefly at this time some of the facts about tuberculosis which must be known to lay workers. Tuberculosis is caused by a specific organism, the tubercle bacillus and, as we have all learned through the educational work of the organizations devoted to its prevention and cure, is a communicable disease. It is, however, curable if taken in time; the principal means of cure being a carefully supervised regimen of rest, fresh air and proper food. It is true that during the past few years a great many other methods of cure have been discovered and are in use today, but the enormous development of the sanatorium movement during the past twenty years took place chiefly because of the realization that it was necessary to provide suitable institutions in which the formula of rest, fresh air and good food could conveniently be applied.

\* Read at Annual Institute of Chief Occupational Therapists, New York State Hospitals, 1927.

For the purpose of sanatorium treatment, tuberculous patients are usually grouped broadly into three classes:

(a) Bed, or "infirmity" cases; acutely ill, requiring bed care and regular nursing.

(b) Semi-ambulant cases: able to dress and to walk to the congregate dining room for meals, but, at first, not able to take further walking exercise.

(c) Ambulant cases: able to take a certain prescribed amount of exercise daily, which is increased as the patient's condition improves.

It is not possible to state definitely the proportion of cases in each of these classes, since it varies in different institutions, and, from time to time, in the same institution.

This broad classification into three groups has also various sub-classifications, differing according to the practice of the institution concerned.

With the foregoing classification in mind, it is convenient at this point to include some remarks on the "flow" or progression of patients through a sanatorium.

In good sanatorium practice it is usual to keep all newly-admitted patients under observation in bed for a week or two, for diagnosis and classification; the reception and observation section being almost always a part of the infirmity section.

If a patient is acutely ill, he (or she) is placed in a single room. When a patient improves somewhat he is usually removed to a two-bed room. Later, he is assigned to a somewhat larger internal unit, in most modern sanatoriums usually a four-bed ward, and at that stage is generally able to walk in a dressing gown to a local dining room near the ward and take his meals.

If he continues to progress he reaches the stage in which he can put on his outer clothing and walk to the main congregate dining room of the institution to take his meals. He is then classified as a "semi-ambulant" case, and is transferred to the section provided for patients in that stage of treatment.

At first his walks to and from the main dining room may be the limit of his walking exercise, but little by little this is increased until he becomes an "ambulant" case, and is again transferred to other quarters.

It seems well, at this point, to include some remarks about the incidence of tuberculosis amongst patients in mental hospitals.



Several years ago, first in connection with the hospitalization of ex-service men, and later, in its bearings on the problem of tuberculous patients in civil hospitals, I took part in an investigation of this question.

The inquiries showed a wide variation in the proportion of patients in different mental hospitals who were classified as tuberculous. The proportion of patients so classified varied from as low as two per cent in one institution to over eight per cent in another; although the general conditions and type of patients seemed similar in each institution. Careful comparisons were made of a number of hospitals, as several elements may enter into this problem. One result was that it seems fair to conclude that the proportion of tuberculous patients discovered depends on whether or not there is on the medical staff of the institution a physician skilled in the diagnosis of the disease.

In the institution (a large State hospital) which reported that over eight per cent of its patients were classified as tuberculous, one of the medical staff had specialized in tuberculosis, and every incoming patient was subjected to a thorough chest examination. Also, from time to time, all suspicious cases were given careful examinations, including X-ray and clinical laboratory tests.

In the hospital that reported only two per cent of its patients as being tuberculous, no member of its overworked medical staff had had any special training or experience in tuberculosis, and it seemed probable therefore that only manifest cases of the disease were detected.

In the light of the variations mentioned in the preceding paragraphs, it seemed desirable to fix upon some percentage that would be approximately accurate as a basis for planning the special accommodation for tuberculous patients in hospitals for mental disease.

Leading specialists were consulted and it was determined that, as a general rule, it would be wise to assume that not less than five per cent of the total number of beds in such hospitals should be arranged for tuberculous patients. The percentage of tuberculous patients will usually be found to be one or two per cent higher among the women than among the men patients.

The real object of the investigation was to determine the type of accommodation that should be provided for patients who had to

be classified according to their mental condition, as well as according to their tuberculosis. It may be of interest to state it was decided to plan buildings for the tuberculous insane on the assumption that 10 per cent will at times require to be classified as "disturbed" cases; that as high a proportion as 15 per cent of the total number may be of the type that must be under constant observation, either because of a tendency to self-injury, or to annoy others; and that the remaining 75 per cent will probably be of the quiet type, not requiring special and continuous supervision, but general care and attention.

From the point of view of those of us who are called upon to plan special buildings for the tuberculous insane, it is evident that the problem resolves itself into planning accommodation of such a type that will provide for segregation into three groups according to the mental state of the patients; with facilities for applying the familiar, well-tried formula of rest, fresh air and nourishing food, which still holds the premier place in the treatment of tuberculosis.

I must come now to a matter which I am sure some of you have in your minds; namely, the possible danger that persons closely associated with tuberculous patients may contract the disease. The realization, following on the discovery of the tubercle bacillus by Robert Koch, that tuberculosis, or "consumption," was a communicable disease led to the campaign for the segregation of consumptives, and for better health habits leading to the prevention of the spread of the disease.

The campaign succeeded all too well in one respect in that it developed in many persons that unreasoning, morbid fear of tuberculosis which the medical profession characterizes as "phthisiophobia."

Today, a great many authorities seem inclined to minimize the danger of infection of tuberculosis from person to person in adults; particularly since the discovery, now generally accepted, that tuberculosis is largely an infection of childhood. That, however, is a matter for medical authority, but for our purposes here today I desire to emphasize the fact, proved by years of experience in hundreds of institutions, that a well-conducted tuberculosis sanatorium is one of the safest places to be in if one wishes to avoid contracting the disease.

The dread of tuberculosis has also extended to articles made by

tuberculous patients in occupational therapy departments of hospitals and sanatoria; fears being often expressed that the articles may carry the infection. It is not necessary for me to enlarge on the fallacy of such fears, since, at the instance of some members of this Institute, an authoritative pronouncement upon this matter was made some time ago by the National Tuberculosis Association, through its medical secretary, Dr. John A. Smith. The statement was published in *Occupational Therapy and Rehabilitation*, the official organ of the American Occupational Therapy Association, and since most of you are members of the Association, you have probably read it. There are some reprints here, however, and each member of the Institute is welcome to a copy if there are enough to go round.

In planning therapeutic occupations for the tuberculous, it is more than ever necessary to remember that the work must be prescribed by the physician. In particular, he should indicate the duration and type of work; whether light, medium or heavy. One important point to remember in dealing with tuberculous patients is that the prime feature of the treatment in most cases—bodily rest—is tedious. Getting well from tuberculosis is a long and wearisome process, and in the opinion of many authorities one of the greatest values of occupational therapy for tuberculous patients is that it affords a relief from the intolerable boredom and ennui that are inherent in the nature of the treatment.

The diversional value of occupational therapy needs, therefore, to be kept in mind throughout in dealing with tuberculous patients, whether they be normal, or mentally ill. For patients in the acute stage, infirmary or bed cases, it is obvious that very little but diversional occupational therapy can be provided, since absolute bodily rest is imperative in that stage. For patients in a high febrile condition, occupation of any kind is, of course, contra-indicated; although some tuberculosis specialists have found that a moderate amount of passive entertainment, such as music, is of value in such cases.

When the patient's condition improves somewhat and he, or she, is able to sit up in bed occasionally, some very simple handwork may be given. Care must be taken, however, in cases of pulmonary tuberculosis, that the occupation involves little but wrist and forearm work; since arm movements may put a strain on the pectoral muscles.

Drawing, painting, weaving on small looms, bead work, raffia work, embroidery and similar occupations have all been used successfully for bed cases. For patients whose mental condition renders it suitable, some simple reading will be useful. As some of you know, academic work has been found useful at this stage for tuberculous patients who are mentally normal.

If the patient continues to improve, the daily sitting-up periods are gradually lengthened until he can be classified as "semi-ambulant"; that is, he is allowed to dress and to take his meals in the main dining room. Between meals, semi-ambulant patients usually recline in cure chairs on a porch, where they may undertake more advanced work of the type given to bed cases. If all goes well, the physician next prescribes exercise; usually in the form of a gentle walk for a prescribed period. If no set-backs are experienced, the patient is soon allowed to undertake handwork involving a little more strength. At this stage, it is well to provide a heavy table, to stand on the "cure porch", at which patients can sit and do simple craftwork, requiring the use of a vise, or other tools and appliances that cannot be employed at the bedside or in a reclining chair.

In dealing with patients suffering from pulmonary tuberculosis, the occupational therapist should pay particular attention at this and succeeding stages of their recovery to the matter of correct posture. Proper posture is, of course, of importance in curative work in other diseases, but it is of special importance in tuberculosis.

I feel sure, however, that this question of correct posture has often been called to your attention by your director, Mrs. Slagle, who has always been keenly mindful of its importance. I remember very well when I accompanied her on some visits she paid during the Great War to Military Hospitals in Canada, where she had gone at the request of the Canadian Military Hospitals Commission to help in the development of occupational therapy, how in more than one hospital she called the attention of the medical officer in charge of the curative workshop to the faulty postures of some of the patients.

For cases of non-pulmonary type, such as tuberculosis of the glands, joints and bones—Pott's disease in particular—orthopedic considerations will, of course, govern the therapeutic occupations.

As a semi-ambulant case, the patient is now approaching the time when the physician begins to apply in earnest the second part of that dictum of a famous tuberculosis specialist who said, "Rest saves life, but exercise makes well."

Gradually the patient's walking and other bodily exercise is increased until he becomes an "ambulant" case, and is often referred to in sanatorium parlance as being "on full exercise."

At this stage, he is able to spend a prescribed daily period in the curative workshop of the occupational therapy department, and another element must now be taken into account; namely, the necessity for what is termed the "hardening-up" of the patient to prepare him for active work on his discharge from the sanatorium, or from the tuberculosis division of the mental hospital, as an arrested or, at least, quiescent case.

Various occupations can be used for tuberculous patients in ambulant stage, but in my personal opinion there is nothing better for male patients than woodworking and its allied occupations, provided that certain precautions are taken. The shop must, of course, be well ventilated and properly lighted by natural methods. To insure that an undue strain is not put on the chest muscles, the heavier operations should be performed by power-driven machinery. In equipping a woodworking shop for tuberculous patients, I always specify at least a circular saw, a band saw, a small surface planer, a post borer and a mortiser; preferably with individual electric drive for each machine.

Weaving may also be engaged in, provided that the fabrics woven be of moderate width, and that no dust-producing materials are used.

Sheet metal work has also been used successfully for tuberculous patients, but bronchial irritation from acid or other fumes must be guarded against.

Cement work is considered objectionable by some physicians, because of the dampness of the work and the surroundings.

If opportunities are available, light gardening, fruit culture, and poultry work are very suitable as curative occupations for ambulant tuberculous patients; although very few ex-patients can take up employment of that sort as permanent vocations after discharge.

In that connection, it is scarcely necessary to remind this audi-



ence of the value of relating the curative work provided during the period of a patient's hospitalization with work that he can suitably engage in after his discharge.

In the case of the tuberculous insane in your hospitals, that should be kept in mind; alike in cases where the patient will probably be paroled to his home after the arrest of his tuberculosis, and in cases in which, because of his mental condition, he will probably remain a permanent member of the hospital community.

Throughout, I have been using masculine pronouns in referring to the patients, but the general principles I have endeavored to enunciate apply equally to female patients.

In general, there are few occupations used for curative purposes in which tuberculous patients cannot safely engage, provided that the work is carried on under hygienic conditions, is carefully prescribed to meet the needs of each case, and faithfully supervised and directed by the occupational therapist.

## THE RATIONALE OF OCCUPATIONAL THERAPY FROM THE PSYCHOLOGICAL STANDPOINT\*

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Nowadays it is hardly necessary to speak of occupational therapy in terms of the step-child in the family of therapeutic procedures. As a matter of fact, occupational therapy now holds a regular place in the therapeutic equipment of the modern hospital whether interested, primarily, in the treatment of physical or mental ailments. And so it is unnecessary to defend or praise its value as an indispensable adjunct to the psychotherapy of mental cases. The results are obvious and familiar to all. But just why occupational therapy, especially from the psychological standpoint, should produce favorable results is perhaps less clear and open to discussion. It is my purpose, therefore, to throw what light I can upon this point and to offer a few suggestions relative to the possible reasons why occupational therapy should be beneficial. And, in doing this, I plan to consider our problem from that same dynamic aspect which we like to maintain toward the psychoses. In using the word dynamic, I already connote a certain flexibility of attitude toward occupational therapy, whether one discusses it from the practical or theoretical standpoint; this, moreover, is why all methods of occupational therapy must be flexible and aimed to meet the demands of the individual case.

As in psychopathology so also in occupational therapy, I would first of all like to consider the individual as a whole, as a human organism which is constantly able to store, transform, and discharge energy. I would like to maintain that the brain of this organism is endowed with certain reflexive mechanisms which are capable of distributing, discharging, and inhibiting the dissipation of energies; that energies, when inhibited by the brain, can give rise to tensions which are perceived as painful and unpleasant to the human organism. Bleuler expresses this all very nicely when he says: "One speaks of tensions associated with attention, with a tensing of the will, of sexual tension. Then too, one calls a person under tension when he holds in check an affect which might have been discharged. Here we are dealing with the concept of dynamic

\* Read before the Ward's Island Psychiatric Society, March 30, 1927.

tension as it is understood in physics, and which has received its designation from a spring under tension, although it can most appropriately be illustrated by the steam tension in the boiler of a machine. In a similar manner, one can also consider the psychic machine as laden with energy. When attention is intensified, the energy becomes directed toward perceptual, ideational or motor processes: the volitional tension enhances the strength of the attentiveness and the motor manifestations. In the sexual, affective, and impulsive tensions in general, the energy at hand, which would like to express itself in a definite way, becomes held in check and in this way, eventually becomes damned back, accumulates, and is more capable of explosive discharge."<sup>1</sup> It lies within the experience of all of us that when such inhibited, pent-up, or accumulated energies, which cause sensations of tension, are released through intellectual, emotional, or motor discharge in the form of work, a certain amount of relaxation and feelings of pleasure ensue. Again and again, I have spontaneously heard patients remark that they feel better when they are doing some form of work.

The intrapsychic balance of energies is quite different in normal people than in functional mental cases. The mentally healthy person maintains a relatively satisfactory balance between the supply of energy and its discharge, so that great accumulations are not apt to occur. And whenever such accumulations do occur, they are discharged through intellectual, affective, impulsive, and motor channels or their combinations in a manner which is more or less in conformity with ethical standards. One will also note that this energy discharge takes place through certain neuropsychic patterns of discharge—through intellectual, affective, impulsive, or motor channels or combinations of these. Furthermore, it is well known that one pattern of energy discharge may, to a certain extent, be substituted for another, e. g., where muscular activity is substituted as a means of energy discharge for pent-up energy which should have been discharged through the impulsive (sexual) pattern of discharge. Then too, we have the various forms of sublimation. This discharge by substitution, however, can probably never be a complete one, so that occupational therapy has its limitations. That is why occupational therapy, in itself, will only cure the very simplest mental cases. To a certain degree, on the other hand, such

<sup>1</sup> Bleuler: *Naturgeschichte der Seele und ihres Bewusstwerdens*. Verlag V. Julius Springer, Berlin, 1921.

therapy is capable of diminishing intrapsychic accumulations of energy.

In certain functional mental cases, like schizophrenia, the energy situation is quite different. Here the energy discharge through the emotional and impulsive patterns is inhibited and results in a damming back and relative accumulation of energy which may discharge itself in delusions, hallucinations, or become invested upon some postural attitude or may periodically be dissipated in aimless attacks or explosions of excitement. Occupational therapy aims to harness such aimless motor activity to some form of useful work—to substitute a useful pattern of discharge for a pernicious one. Bleuler believes that “when one impulse becomes inhibited by another, then, according to general physiological laws, it becomes increased; this increase also affects the inhibitory impulse and leads to an increased use of energy on both sides until some other regulative apparatus or exhaustion of the energy supply makes an end of the process.” In certain mental cases, this damming back of energy brings other, lower regulative processes into action; hypnoic (dreams, hallucinations, etc.) and hypobulic (tantrums, stupors, etc.) mechanisms become invested with energy. In some cases, furthermore, this intrapsychic play of impulse and counter-impulse leads to feelings of exhaustion, which are so common in mental cases. By encouraging energy discharge through purposive motor and other useful channels by means of occupational therapy, there tends to occur a reduction of intrapsychic tension and feelings of exhaustion, as well as a diminution in the energy available for lower forms of intrapsychic energy discharge.

Besides ameliorating the energy situation, various forms of occupational therapy have a marked physiological effect; they stimulate metabolism, increase the blood supply to the brain, and improve the patients' general physical condition. Then too, activity in itself is as a rule associated with pleasant feelings and sensations, while inactivity is more apt to be unpleasant.

The patterns of energy discharge vary to some extent in different individuals. Some will prefer motor discharge in the form of manual labor while others will require a combined motor, emotional and ideational discharge in the form of art. Those external situations, stimulating patterns of discharge which are conducive to the most satisfactory release of tension and the production of relax-

ation, are the ones which are interesting to the patient. Hence occupational therapy must be interesting and individual. It should help him to use new patterns of energy discharge and assist him in overcoming the handicaps resulting from a crippling of normal patterns of energy outlet; it should encourage him to give up pernicious forms of outlet by substituting newer, more satisfactory ones.

A special form of energy discharge through the emotional sphere is known as transference. Here a person directs or lends himself emotionally to another, either positively in the form of affection or negatively in the form of hatred. In the occupational therapy classes, where the instructors are in daily contact with the patients, this is a very effective means of securing the cooperation of the patient. When a transference is established, the patient is more amenable to suggestion and encouragement. Such transference may be secured to a certain extent by efforts on the part of the therapist to understand and to sympathize with the patient's difficulties, by taking an interest in his productions, by encouraging him and by taking into account his habitual reactions or personality make-up.

After a consideration of some of the purely psychological aspects of the problem, let us now turn briefly to some of its medico-psychological elements. As we all know, in sizing up a mental case we must consider: (1) The cerebral condition of the patient, whether or not he has organic brain disease. (2) The constitutional or personality make-up and patterns of reaction of the patient. (3) The experiences of the patient. The third is chiefly of psychopathologic and psychotherapeutic interest and does not concern us here. The first two, however, concern both the physician and occupational therapist. The first is important in relation to the dosing of the work and is one of the main reasons why dosing should be under the supervision of the physician. It stands to reason that an organic mental case must receive special attention as to the amount of work and physical exercise prescribed. There are many forms of activity which, though suitable for other types, would be directly harmful to the organic case. As regards the second point, the personality of schizoids requires a different approach than that of syntoids.

In general these types tend to be interested in different forms of



occupation. Routine, tedious, intricate work, for example, will be tolerated more easily by the schizoid than the syntoid, who requires more activity and variation to keep him happy and satisfied. This is enough to indicate that occupational therapy must be under the direct supervision of the physician, must not be haphazard, must conform with the needs and interests of the individual patient. It should tend to divert the patient from his troubles and phantasies, and demonstrate to him, in spite of complaints to the contrary, that he is still able to perform useful work. In functional cases, the tendency to mental fatigue, which follows as a result of energy used in the process of repression, and the cerebral lesions in organic cases would counterindicate intellectual activity as a form of occupational therapy. Physical activity is to be preferred.

To sum up, then, from the psychological standpoint one would conclude that in occupational therapy the patient ought to be considered as a whole; his activities should be controlled by the physician and the occupational therapist. The work should be interesting and suited to the individual needs of the case. Monotony and haphazard methods are to be avoided. Routine should never become irksome. The work is distinctly medical; its application should be flexible and in conformity with dynamic principles. The therapist should understand the personality and habitual reactions of the patient; should be in a position to correct them if faulty. And finally one must bear in mind that activity is an attribute of all living organisms; that passivity and inertia are properties of inanimate matter; that allowing a patient to vegetate on the wards reduces neuropsychic metabolism, causes inner tensions with subsequent periodic explosions of energy or release through primitive types of thought, and is conducive of mental and physical deterioration, and finally, occupational therapy encourages the patient to make contact with reality.

## SURFACE TENSION STUDIES WITH *L. ACIDOPHILUS* AND *L. BULGARICUS*\*

BY NICHOLAS KOPELOFF AND PHILIP BEERMAN

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Much confusion attaches to the differentiation between *L. acidophilus* and *L. bulgaricus*. Neither the production of acidity, nor the fermentation of maltose, sucrose and levulose have proven adequate criteria for establishing the identity of these lactobacilli.<sup>1</sup> Recently Albus and Holm<sup>2</sup> suggested the surface tension method for distinguishing culturally between the two closely related organisms under discussion. In a brief note we<sup>3</sup> corroborated the finding that in a medium whose surface tension is depressed by sodium ricinoleate, *L. bulgaricus* was inhibited at a surface tension below which *L. acidophilus* developed readily. The subject appeared to be worthy of further investigation, the results of which are here reported.

*Methods.*—The procedure used by Albus and Holm,<sup>2</sup> which was kindly placed at our disposal by them before publication, has been modified in an attempt to establish a standardized method which would permit of easily repeated tests falling within the critical range.

The medium for growth is made up of 1 per cent yeast, 1 per cent peptone, 1 per cent lactose, 1 per cent beef extract and 0.3 cc. of a 5 per cent alcoholic solution of brom cresol purple per liter, as an indicator. The yeast is digested by autoclaving 40 gm. of yeast in one liter of distilled water for 2 hours at 20 lbs. pressure. The proper amounts of other ingredients are added to the digest which is made up to 4 liters and autoclaved for 15 minutes at 10 lbs. pressure. It is allowed to stand in the ice box for 24 hours after which the supernatant liquid is decanted and reesterilized for 15 minutes at 15 lbs. pressure. The final Ph should be about 7.0.

All cultures to be used are acclimatized to this medium by 3 successive daily transfers. When satisfactory growth is obtained they are ready for inoculation into the same medium to which depres-

\*Reprinted by the courtesy of the Journal of Infectious Diseases, from vol. 40:6, June, 1927, p. 656.

1. Kopeloff, N.: *Lactobacillus Acidophilus*, 1926.

2. *J. Bact.*, 1926, 12, p. 13.

3. *Proc. Soc. Exper. Biol. & Med.*, 1926, 23, p. 544.

sants are added in the following manner, taking the desirable concentration of 4.2 per cent sodium ricinoleate as an example.

Especially purified sodium ricinoleate very generously placed at our disposal in liberal quantities by Dr. W. P. Larson of the University of Minnesota, is made up by weighing out 4.4 gm. sodium ricinoleate, adding it to 100 cc. distilled water and thoroughly dissolving. The solution is filtered through paper. With a pipet amounts of 0.5 cc., 1.0 cc., 2 cc., 5 cc., etc., are each diluted to 200 cc. with the yeast medium as diluent. When different percentages of sodium ricinoleate are used, i. e., 0.275, 0.6, 2.1, 6.1, etc., the same method of dilution of 0.5, 1, 2 cc., etc., to 200 cc. of yeast medium is followed. Similarly with sodium oleate except that when high percentages such as 23.4 are used the graded amounts, 1.2 gm., 1.8 gm., 2.4 gm., etc., are weighed directly into 200 cc. of yeast medium. The depressed mediums, in 6 cc. amounts are then sterilized in Pyrex test tubes for 15 minutes at 15 lbs. pressure. After cooling, the tubes are inoculated in duplicate with .020 cc. of an acclimatized culture. Triplicate uninoculated tubes are kept in the ice box while duplicate uninoculated and inoculated tubes are incubated as controls with the inoculated tubes at 37 C. for 7 days. Tubes in which growth occurs change in color from purple to yellow.

To measure the surface tension of the above solutions, a Traube stalagmometer has been employed. Obviously, great care must be taken to keep this instrument clean. In order to carry out the determinations at a constant temperature the stalagmometer, distilled water, beakers, etc., are kept in a small inoculation room regulated at 25 C. for at least 30 minutes prior to working and the solutions are brought to this temperature when tested.

*Procedure.*—To the upper end of the stalagmometer is attached a rubber tube approximately 220 mm. by 3.5 mm. with a glass mouth-piece. A screw pinchcock is used to regulate the flow of drops. A small beaker containing distilled water is placed under the lower end of the stalagmometer and the water is sucked up to within one inch of the upper end. After washing out 2 or 3 times, the stalagmometer is almost filled with water and the drop surface dried off with lens paper. The pinchcock is so regulated that the drops flow at the rate of about one every 4 to 6 seconds. It is very important to time this rate as more than 18 to 20 drops per minute should not be allowed.

One of the triplicate, uninoculated tubes of the medium (kept in icebox), depressed with a given amount of depressant is used to rinse out the stalagmometer several times. Previously the solution should be carefully decanted into a small clean beaker in every instance so as to leave behind the sediment or precipitate. This procedure is more desirable than filtration for it precludes the possible absorption of depressant. Then readings of the number of drops delivered between 2 marked points on the stalagmometer are made on the solutions to be tested (uninoculated or inoculated). Thus, water which should always be run as a control gives a reading of 22.5 drops at 25 C. with our stalagmometer while 0.5 cc. of 4.2 per cent sodium ricinoleate in 200 cc. of medium gives readings averaging 37.5 drops. It should be stated that in general the duplicates on uninoculated medium agree within 0.5 drop while duplicates on inoculated medium agree within 2 to 3 drops. When dealing with inoculated tubes the supernatant liquid should be pipetted into a small clean beaker taking care not to disturb the floating scum or the deposit.

Having determined the number of drops delivered by the various depressed solutions and the specific gravity of the yeast medium by the usual pycnometer method, the following formula is used for calculating in dynes:

$$\frac{72.1 \quad \text{number of drops of solution} \times 1.0}{X \quad \text{specific gravity of solution} \times \text{number of drops H}_2\text{O}}$$

Number of drops of solution, or  $\text{H}_2\text{O}$  = number of drops of the fluid as delivered by stalagmometer.

1.0 = approximate specific gravity of water. Specific gravity of solution is determined by pycnometer.

X = number of dynes per cm. (surface tension of solution).

72.1 = number of dynes per cm. (surface tension of water).

*Cultures.*—The cultures used in this investigation have come from several sources. A1 represents an X strain of *L. acidophilus*, originally obtained from Dr. W. L. Kulp of Yale University, which we have repeatedly passed through the human intestine with marked therapeutic results.<sup>1</sup> We are also indebted to the same investigator for *L. bulgaricus* strains B1, B2 and B3. *L. acid-*

ophilus cultures A2 and A3 as well as *L. bulgaricus* B4 and B5 were employed by Albus and Holm<sup>2</sup> in their surface tension experiments and were kindly offered to us. *L. acidophilus* Y strains, A4 and A5 are being utilized commercially. *L. acidophilus* Y strains, A6 and A7 are also employed commercially but have not been experimentally investigated by us. The same is true of *L. acidophilus* strain A8.

Laboratory methods for the differentiation of lactobacilli are of importance but in the last analysis our present interest in these organisms centers about their therapeutic application. *L. acidophilus* survives in the human intestinal tract and can induce a transformation of the intestinal flora under proper conditions. *L. bulgaricus* cannot.<sup>1</sup> Therefore no matter how the organism be labelled we must rely ultimately upon human passage to establish its identity. This has been authenticated in the case of our *L. acidophilus* strains A1, A4 and A5. The original source of the other *L. acidophilus* strains employed is such as to leave no room for question but second-hand cultures should not be greatly relied upon in fundamental work.

The *L. bulgaricus* cultures, B1 and B4 have been employed without obtaining implantation in feeding experiments, by Kulp and Rettger<sup>4</sup> and ourselves,<sup>4</sup> thus assuring the identity of these strains.

4. J. Am. M. A. 1926, 87, p. 833.

*Results.*—Using the cultures and procedure described above the results obtained with sodium ricinoleate as depressant are recorded in Table I.

Under each percentage (0.275, 0.6, 4.2, 4.4 and 6.1), in the first column, are given the lowest number of dynes at which growth occurred. In the second column, are given the highest number of dynes at which growth did not occur. There is little point in tabulating here higher values where growth has occurred, or lower values at which it has not occurred, except where it narrows the difference so that a critical point can be established. In general each set of "lowest" and "highest" figures here presented represents the critical points arrived at in a series of approximately 6 to 10 different concentrations. The space required for our complete data seems scarcely justifiable, consequently they have been omitted. A simple illustration will suffice; culture A1 was tested in 4.4 per cent sodium ricinoleate using 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7,



0.8, 0.9 and 1.0 cc. per 200 cc. of medium. Growth occurred at 0.1, 0.2, 0.3, 0.4, 0.5 cc. but did not occur at 0.6, 0.7, 0.8, 0.9 and 1.0 cc. Therefore the surface tensions of only 0.5 and 0.6 cc. were determined. These were found to be 36.1 and 35.0 dynes respectively. Subsequent repetition narrowed this range to between 35.3 and 35.0 dynes. Most of the sets of "lowest +" and "highest 0" figures do not represent such a narrow range. For example, in Table I the first set of figures for A1 under 4.4 per cent are 39.2 and 34.5 dynes

TABLE I  
GROWTH OF *L. ACIDOPHILUS* AND *L. BULGARICUS* AT VARYING SURFACE TENSIONS  
(IN DYNES) WITH SODIUM RICINOLEATE AS DEPRESSANT

	0.275 Per cent		0.6 Per cent		4.2 Per cent		4.4 Per cent		6.1 Per cent			
	Low- est +	High- est 0	Low- est +	High- est 0	Low- est +	High- est 0	Low- est +	High- est 0	Low- est +	High- est 0	Low- est +	High- est 0
L. Acidophilus—												
A1.....	40.2	....	39.3*	....	39.4	34.1	39.2	34.5	39.4	34.7	35.2	35.0
					39.2	34.7	37.8	35.0				
							36.1					
							35.3					
A2.....	....	....	39.3*	....	39.2	35.0	....	....	39.4	36.5	39.2	36.5
A3.....	....	....	39.3	....	....	....	....	....	42.7	39.4	39.3	39.4
A4.....	....	....	....	....	39.4	34.5	39.2*	34.5*	....	....	39.2	34.5
A5.....	....	....	....	....	36.1	35.0	....	....	....	....	36.1	35.0
A6.....	....	....	....	....	39.2	38.1	....	....	....	....	39.2	38.1
A7.....	....	....	....	....	39.2	38.1	....	....	....	....	39.2	38.1
A8.....	....	....	....	....	42.6	39.4	....	....	....	....	42.6	39.4
L. Bulgaricus—												
B1.....	44.7	42.9	....	....	43.5	40.7	....	....	....	....	43.5	42.9
	44.7	43.5										
B2.....	43.5	....	43.5	42.6	51.2*	42.3	....	....	....	....	43.5	42.6
					44.7	42.6						
					44.5	44.4						
B3.....	....	....	....	....	43.5	39.2	....	....	....	....	43.5	39.2
B4.....	....	....	....	....	....	43.5	....	....	....	....	....	43.5

\* Repeated.

Figures indicate reading of highest tension with no growth (0), and lowest tension allowing growth (+), with different amounts (Per cent) of depressant. No test is indicated by .....

respectively. This means that no intermediate values were included in this particular test, rather than that growth did not occur within

such a wide range. Obviously, the trial and error method required for such work makes for duplication of tests in order to establish the critical point. In this sense the values recorded in the last two columns of Table I are provisional and not final. It should be remembered that unless otherwise stated, all the values in dynes are based on uninoculated depressed medium. The experimental error can be considered to be about 0.5 dyne.

Examining Table I in detail one finds that the range of "lowest + " and "highest 0 " for any single percentage of sodium ricinoleate is about 3 dynes although it may be as much as 5 dynes. There is not much evidence upon which to base a comparison of different percentages of sodium ricinoleate as influencing the growth of any particular organism but in general it does not appear

TABLE II

GROWTH OF *L. ACIDOPHILUS* AND *L. BULGARICUS* AT VARYING SURFACE TENSIONS (IN DYNES) WITH SODIUM OLEATE AS DEPRESSANT (PER CENT)

	3.4 Per cent		4.2 Per cent		8.0 Per cent		11.7 Per cent		Low- est	High- est
	Low- est	High- est	Low- est	High- est	Low- est	High- est	Low- est	High- est		
	+	0	+	0	+	0	+	0	+	0
<i>L. Acidophilus</i> —										
							25.5			
A1.....	35.7	...	35.0	...	24.0	...	25.2	24.2	24.0	24.2
A2.....	...	...	35.0	...	...	...	...	...	35.0	...
A3.....	...	...	36.0	...	...	...	...	...	36.0	...
A4.....	...	...	35.0	...	...	...	...	...	35.0	...
A5.....	...	...	35.0	...	...	...	...	...	35.0	...
A6.....	35.7	...	...	...	...	...	...	...	35.7	...
A7.....	35.7	...	...	...	...	...	...	...	35.7	...
A9.....	...	...	40.3	38.5	...	...	...	...	40.3	38.5
<i>L. Bulgaricus</i> —										
B1.....	41.2	33.5	...	...	...	...	...	28.2	35.7	33.5
	36.0									
	35.7									
B2.....	48.7	43.5	43.5	42.3	...	...	...	...	48.7	43.5
B3.....	...	...	43.5	42.3	...	...	...	...	43.5	42.3
B4.....	...	...	43.5	42.3	...	...	...	...	43.5	42.3

TABLE III  
CRITICAL SURFACE TENSION FOR GROWTH OF *L. ACIDOPHILUS* AND *L. BULGARICUS*  
(IN DYNES)

	Sodium ricinoleate			Sodium oleate		
	Lowest	Highest	Critical	Lowest	Highest	Critical
	+	O	point	+	O	point
<i>L. Acidophilus</i> —						
A1.....	35.3	35.0	35.2	24.0	23.6	28.8
A2.....	39.2	36.5	37.9	35.0	...	...
A3.....	39.3	39.4	39.4	36.0	...	...
A4.....	39.2	34.5	36.9	35.0	...	...
A5.....	36.1	35.0	35.6	25.5	...	...
A6.....	39.2	38.1	38.7	35.7	...	...
A7.....	39.2	38.1	38.7	35.7	...	...
A8.....	42.6	39.4	41.0	36.0	...	...
A9.....	...	41.2	...	40.3	38.5	39.4
Average .....	...	...	37.9	...	...	...
<i>L. Bulgaricus</i> —						
B1.....	43.5	42.9	43.2	35.7	33.5	34.6
B2.....	43.5	42.6	43.1	43.5	43.5	43.5
B3.....	43.5	39.2	41.4	43.5	42.3	42.9
B4.....	...	43.5	43.5	43.5	42.3	42.9
B5.....	43.5	42.6	43.1	...	...	...
B6.....	...	43.5	...	...	...	...
Average .....	...	...	43.6	...	...	41.0

to make any difference whether higher or lower concentrations are employed. Our preference is for the mean, that is neither a high or low percentage, for either extreme makes for an increase in experimental error, the high percentages because of the danger of unequal distribution, the low percentages because of increase in dilution of the medium. The difference between the growth of *L. acidophilus* and *L. bulgaricus* at varying surface tensions makes it difficult to use any single percentage of sodium ricinoleate for both species. Thus from the data in Table I the percentage of choice for *L. acidophilus* would be 4.2, while for *L. bulgaricus* it would be 0.275.

In Table II are presented similar data where sodium oleate (c. p.) has been used as depressant. While the critical ranges have not yet

been worked out for all the organisms used it will be seen that in general the nature of the results resembles that of Table I.

Of further interest is the summary presented in Table III which permits a comparison of the critical values of the last two columns shown in Tables I and II. For each soap used the "Critical Point" is calculated the midpoint between the lowest and highest readings. Several interesting facts are here disclosed. It will be seen that under sodium ricinoleate the three therapeutically effective *L. acidophilus* cultures, A1, A4 and A5 show the lowest critical points, namely, 35.2, 36.9 and 35.6 dynes respectively. The other *L. acidophilus* cultures may possess therapeutic value but this has not yet been satisfactorily demonstrated. The *L. bulgaricus* cultures all have a higher critical point than the *L. acidophilus* cultures. Again it is significant that the two cultures, B1 and B2, which in our hands have failed of intestinal implantation, had critical points of 43.2 and 43.1 respectively. In other words there is a difference of 7.3 dynes between the growth of our authentic *L. acidophilus* and *L. bulgaricus* cultures. Such a difference lies beyond any experimental errors involved and merits discussion later.

It is scarcely necessary to point out that the commercial *L. acidophilus* cultures (A8 and A9) which gave fairly high critical points may be regarded with considerable suspicion as being border-line strains. In any event the average of all the strains called *L. acidophilus* is 37.9 while that of *L. bulgaricus* is 43.6—a significant difference of 5.7 dynes.

Turning our attention to the values for sodium oleate in Table III we find that the critical point for A1 is 23.8 dynes. The average critical point for the *L. bulgaricus* cultures with this depressant is 41.0, or a difference of over 17 dynes, which is very striking. In a later discussion we will consider the important finding that the critical point for *L. acidophilus* is 11.4 dynes lower with sodium oleate than with sodium ricinoleate, while the corresponding values for the *L. bulgaricus* cultures are not so widely divergent.

In considering the growth of bacteria at varying surface tensions it has already been stated that the determinations were made on uninoculated depressed mediums. It was of interest in this connection to make a few determinations of inoculated depressed medium after 7 days' incubation at 37 C. The anticipation of differences of varying degrees was realized and the data are presented in

Table IV. It will be seen from Table IV that with 4.2 per cent sodium oleate the difference between inoculated and uninoculated (control) medium for two strains of *L. bulgaricus* was about 6.0 dynes. Similarly, in higher percentages, *L. acidophilus* cultures gave differences of about 8.0 dynes. With sodium ricinoleate however, the differences were very much less. Gibbs, Batchelor and

TABLE IV  
COMPARISON OF SURFACE TENSION (IN DYNES) IN THE PRESENCE AND ABSENCE OF GROWTH

Organism—	Sodium oleate									Sodium ricinoleate		
	4.2 Per cent			11.7 Per cent			23.4 Per cent			4.2 Per cent		
	Con-	Differ-		Con-	Differ-		Con-	Differ-		Con-	Differ-	
	trol	Growth	ence	trol	Growth	ence	trol	Growth	ence	trol	Growth	ence
A1.....	...	...	...	25.5	33.5	8.0	25.1	33.5	8.4	...	...	...
A5.....	...	...	...	25.5	32.8	7.3	...	...	...	36.1	39.2	3.1
B1.....	35.7	41.5	5.8	...	...	...	...	...	...	43.5	44.0	0.5
B5.....	32.8	38.7	6.1	...	...	...	...	...	...	43.5	45.9	2.9

Sickels have published interesting data of a similar nature using various soaps.<sup>5</sup> From a practical standpoint it is much more dif-

5. J. Bact., 1926, 11, p. 393.

ficult to deal with inoculated than with uninoculated medium in making stalagmometer readings, for the bacterial growth not only dirties the apparatus but also affects the flow of drops. Furthermore, it is to be expected that the production of lactic and other acids would influence the depressant.

Since surface tension appears to be an adequate criterion for differentiating *L. acidophilus* from *L. bulgaricus* it is of interest to compare it with the most satisfactory previous method, namely, the fermentation of sugars. Therefore from active milk cultures transfers were made to sugar-free casein digest broth, Ph 7.0, containing brom cresol purple as an indicator. Sterilization without heat after adding the sugars was effected through Mandler diatomaceous filters. Dextrose was used chiefly as a control to determine growth since it is fermented by the lactobacilli. The sucrose used by us was first tested by *B. coli* which does not ferment this sugar. All controls were negative after 48 hours' incubation while the results obtained with inoculated tubes are presented in Table



V, together with the critical surface tension expressed in dynes, using sodium ricinoleate as depressant.

It will be seen from Table V that the only culture to ferment all the sugars was A1. It also grew at the lowest surface tension. The other two authentic *L. acidophilus* strains, A4 and A5, fermented maltose, levulose and dextrose but not sucrose. They were able to grow at very low surface tensions, indicating that this test is superior to sugar fermentation in establishing the identity of the culture. *L. acidophilus* A6 and A7 grew at a lower surface tension than any *L. bulgaricus* strains yet the former failed to ferment

TABLE V  
SUGAR FERMENTATION AND SURFACE TENSION GROWTH

	Critical point in dynes (Ricinoleate)	Dextrose	Sucrose	Maltose	Levulose
A1 .....	35.2	+	+	+	+
A2 .....	37.9	+	+	+	+
A4 .....	36.9	+	0	+	+
A5 .....	35.6	+	0	+	+
A6 .....	38.7	+	0	+	0
A7 .....	38.7	+	0 (?)	+	+(?)
A8 .....	41.0	+	+	0	0
A9 .....	39.4*	+	0	0	0
B3 .....	41.4	+	0	0	0
B4 .....	43.5	+	0	0	0
B5 .....	43.1	+	0	0	0
B6 .....	43.5	+	+	+	+

\* Oleate.

Fermentation (+), and no fermentation (0), respectively.

either sucrose or levulose and the latter only feebly attacked levulose. Again this points to the reliability of the surface tension test as compared with the variable results obtained in sugar fermentation. Curiously, A8, supposedly *L. acidophilus*, was inhibited in growth at 41 dynes which is close to the point at which *L. bulgaricus* cannot grow, but definitely on the *L. acidophilus* side of the line of demarcation. Yet with this strain sugar fermentation is negative with maltose and levulose, again demonstrating the unreliability of the latter test. Strain A9, labelled *L. acidophilus*, is also on the borderline shown by its failure to grow at a surface

tention of 41.2 dynes with sodium ricinoleate and a critical point of 39.4 dynes with sodium oleate. This strain fails to ferment any of the sugars employed except dextrose. B6 which was labelled *L. bulgaricus* fermented all the sugars used but failed to grow below 43.5 dynes.

*L. bulgaricus* strains can only grow at higher surface tension values than *L. acidophilus*. All the strains of *L. bulgaricus* we employed failed to ferment any of the sugars used except dextrose.

A survey, therefore, of the data in Table V leads to the conclusion that the surface tension test is much more reliable than sugar fermentation because of the variability of the latter. The surface tension test agrees more closely with clinical trials at implantation. Consequently it is the method of choice from a laboratory standpoint and as a possible substitute for exhaustive clinical investigations.

#### DISCUSSION

From the foregoing data it is evident that surface tension offers a satisfactory criterion of differentiation between *L. acidophilus* and *L. bulgaricus* of known authenticity. In all we have dealt with 12 cultures so that any generalizations must be necessarily limited. While the differentiation between the few authentic cultures is striking, there may exist borderline strains which may not be so prettily dealt with. Furthermore, the continued cultivation of lactobacilli on artificial medium may exert an untoward influence sufficiently great to blur marked differentiation. But consistent results with each organism have been obtained and in general these agree with the findings of Albus and Holm<sup>2</sup> who state that "none of the strains of *Lactobacillus bulgaricus* showed evidence of growth when the medium employed was depressed with sodium ricinoleate to a surface tension of less than 40 dynes, and that most of the strains were inhibited well above this value while all the strains of *Lactobacillus acidophilus* were able to grow when the medium was depressed to a surface tension as low as 37 dynes." On the same cultures, of greater age, our results for *L. bulgaricus* gave an average critical point of 43.6 dynes and for *L. acidophilus* 38.7 dynes. The discrepancy is one of degree and not of kind.

It was stated that different critical values were obtained where different depressants were used. Albus and Holm<sup>2</sup> mention incon-

sistent results when using sodium glycocholate. Walker<sup>6</sup> pointed out that "soaps prepared from pure fatty acids differ markedly in their germicidal properties." In a comprehensive investigation Frobisher<sup>7</sup> found that "as compared with oleate, the other reductants inhibited growth irregularly, at surface tensions too high to explain their effects solely as the result of lowered tension." Similarly, Gibbs, Batchelor and Sickels<sup>5</sup> have pointed out that "there is a considerable difference in various soaps, not only in their ability to depress surface tension, but in their effect on the organisms." Unfortunately, none of these interesting investigations have included sodium ricinoleate as a depressant or lactobacilli as test organisms.

Because of the fact that we have noted the growth of *L. acidophilus* with sodium oleate present at values considerably lower than those obtained where sodium ricinoleate was used it is possible to infer some inhibition, other than surface tension, due to the latter depressant. However, it should be remembered that this difference was scarcely manifest when *L. bulgaricus* cultures were employed. This might argue that sodium oleate has a greater nutritional value for *L. acidophilus* as compared with *L. bulgaricus* and thus account for growth at lower surface tensions. It seems reasonable to assume that neither sodium ricinoleate nor sodium oleate are sufficiently germicidal to these organisms to invalidate their use for surface tension tests.

A final word as to the practical value of the surface tension test for differentiating *L. acidophilus* from *L. bulgaricus*. The ultimate criterion is survival in the human intestinal tract. This necessitates the expenditure of much time and energy to say nothing of adequate cooperation of many human subjects. The surface tension test therefore, represents a shortcut which from a laboratory standpoint may take the place of the more exacting clinical trials. Sugar fermentation tests fail to perform the same function. According to the advice of Dr. W. P. Larson the surface tension of the intestinal contents approximates the critical point established for *L. bulgaricus*. Frobisher<sup>7</sup> claims that "bile reduced the surface tension to about 44 dynes." Albus and Holm<sup>8</sup> state: "That surface tension may be a factor in the implantation of these organ-

6. J. Infect. Dis., 1924, 35, p. 557.

7. J. Infect. Dis., 1926, 38, p. 66.

isms seems a plausible assumption." In other words, the surface tension test is not only of interest as regards the physiological activities of the lactobacilli but bids fair to offer a comparatively simple method of determining therapeutic possibilities.

#### SUMMARY

Within the limitations of the experimental material under consideration the following points have been established. A standardized method for surface tension determinations on lactobacilli has been described and applied to 12 different strains of *L. acidophilus* and *L. bulgaricus*. With sodium ricinoleate 3 strains of *L. acidophilus* of proven therapeutic value grew in a medium depressed below 36 dynes, while 2 strains of *L. bulgaricus* proven by us incapable of intestinal implantation were inhibited at 43.2 dynes. The average critical point for all cultures labelled *L. acidophilus* was 37.9 dynes and for *L. bulgaricus* 43.6 dynes. With sodium oleate *L. acidophilus* grew to 23.8 dynes while *L. bulgaricus* was inhibited at 41 dynes. The surface tension of inoculated and incubated cultures is higher than that of uninoculated controls kept in the ice box.

Surface tension tests on lactobacilli compare favorably with sugar fermentation but offer a more accurate method of differentiation, agree with clinical trials, and may possibly serve as a substitute for the latter in determining therapeutic efficiency.

## THE RELATIONSHIP BETWEEN MENTAL HYGIENE AND THE EDUCATIONAL SYSTEM

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*"Men are more ready to accept error than truth."—Tolstoi.*

*Emerson has somewhere suggested that an unpleasant truth is a safer travelling companion than the most pleasant falsehood.*

*That we may know the truth, and the truth will make us free.*

Since the passage of a mandatory school medical inspection law in New York State in 1913 the public schools have studied the child through the introduction of physicians and nurses into the classroom. Very early in this State-wide program the *education* side of health work began to be stressed, and soon we were speaking of health-education with the emphasis on the second half of the term, while the nurse rapidly developed into a "health teacher." The mentally defective child then enlisted attention and "special classes," previously developed only in the large cities, were extended, and the enlistment of psychologists in the health-education field made possible the segregation of many sub-normal pupils and, more recently, the delineation of a number of problems in the hygiene of the curriculum; educational measurements indicated the limitations of an empirical pedagogy and the defects too often present in classification throughout the grades and in group distribution at the junior high school level.

These approaches to the needs of the *individual child* were the beginnings of a mental hygiene program in the schools; and the use of modern psychology as a guide to better organization of the school program and a better educational adjustment of the pupil is now well established. In New York State officials like Commissioner Graves and Assistant Commissioner Morrison, primarily trained in education but with minds receptive to any contribution that another discipline may have to make to a wider cultivation of their particular field, are alive to the possibilities of applying to certain needs in the school program the technique of still another science and art—psychiatry.

The so-called child guidance movement as a part of the wider mental hygiene movement is not more than six years old, although



the classic studies of Healy and Bronner on the behavior of children were initiated many years earlier and their technique in dealing with conduct disorders has formed the basis of approach in a study of maladjusted children by most other workers in this field.

About three years ago a group of psychiatrists, working in the child guidance field, met jointly with a committee of officials of the National Education Association in Washington for a half-day's discussion of how psychiatry could aid education. The meeting closed with the feeling, on the part of a few of us at least, that the average educator little realized the contribution psychiatry could make to his program, and, conversely, the average psychiatrist seemed to know little about certain problems of the professional educator. Since then much light has been shed upon their mutual responsibilities.

December last a group of college presidents and psychiatrists, representing nine colleges and universities and two preparatory schools, met in New York City to discuss the results of some months of experience with psychiatry as a mental hygiene agent in the life of the college student and to formulate further standards for work in these progressive institutions. The night previous President Angell of Yale in speaking before a gathering of educators, psychiatrists and sociologists, guests of the Commonwealth Fund, declared in substance that no modern college could do justice to its student body without the presence of the consulting expert in mental hygiene, and jokingly remarked that the psychiatric work at Yale with the student body had been so productive of good that Yale might be asked to open an "out-patient" department at Harvard. Dr. Angell then stressed the fact that, important as is the contribution psychiatry has to make to education at the college level it has a wider application to the problems of secondary and elementary school activity and especially to the life of the pre-school child.

We know that during the pre-school years many of the most important behavior patterns (stamped by parents, brothers, sisters and playmates) have been placed upon the child; if not later analyzed and discharged from his personality they constitute real handicaps throughout school and life.

The minister of a church on the campus of a large university recently told us that the first month after college opened last

autumn he had twelve freshmen, seeking advice and consolation, all of whom he said, from the nature of their problems, were cases needing psychiatric consideration.

President MacCracken of Vassar in a recent article on "Parents and Daughters," reveals his awareness of the influence of the interplay of personalities in the family group upon the development and behavior of the college girl, and remarks that these are matters for the psychiatrist to unravel.

A few elementary school executives have awakened to the need of applying psychiatric method to the "problem" child as well as to formulating a more wholesome program of training for all children. The school system of Brookline, Massachusetts, has for two years supplied such service to its teaching force; Berkshire Industrial Farm, Canaan, N. Y., has just finished a three-year demonstration wherein functioned a psychiatric staff upon whose recommendations were based the group, scholastic and vocational classification of the boy and through whose treatment program we hoped to see the emotional conflicts of the child discharged. An outstanding result of the Berkshire Demonstration should be the awakening of educational authorities to the importance of psychiatry as an aid in the schools. The Board of Education of the city of Newark, New Jersey, has recently organized a psychiatric unit to aid in applying the technique of the psychiatrist to educational problems. Dr. C. Edward Jones, superintendent of schools, Albany, N. Y., has, as an ever forward-looking administrator, envisioned the place of a specialty like psychiatry as an economy and aid in constructive application of his school program; and for fourteen years he has consistently recognized the important contribution from this quarter; we believe we are justified in saying that in Albany during this period, the public school system has at all times been the center of the mental hygiene movement locally, and hundreds of problem children, not only from the schools but from local institutions, the courts and various social welfare organizations, have been brought under psychiatric consideration as represented by the facilities available in the public school system. During the last two years the clinical aspects of this work have been intensified through association of the writer with Dr. Amsden in the organization of the weekly mental hygiene clinic at the Albany Hospital.

Psychiatry as applied to the school child is adequately practiced

only by a physician who is well trained in physiology, biology and sociology and in the newer formulations in psychology, particularly the psychology of the instinctive and emotional life, and who has an appreciation of the methods and ideals of the educator; he must have a practical working knowledge of the mental mechanisms that form the framework of human behavior and should be experienced in treating adults who suffer from maladjustment to life—neurotic individuals who simply present the end-products of certain behavior patterns of childhood. The psychiatrist has ample evidence that the individual's behavior is determined by his *feelings* rather than by his thoughts. The average school program as well as the attitudes and "drives" of the average teacher are based upon the conception of the child as an *intellectual* being, whereas he is largely an *emotional* being. The child who, after her first day in school, tells her mother that Miss Smith, the pretty kindergarten teacher, "ought not to be a teacher" but "ought to be a mamma," is, in her first severe test of adjustment to a new world without mother to depend upon, expressing an emotional need which, if not wisely met, may color her later life in a disastrous manner. The college trained adult who has had a hard struggle against his tendency to react very slowly to all instruction and whose handicap goes back to an early and deliberate contradiction of the parental dictum to "speed up" to "hurry" to "get to work on that Latin" to "master the mathematics in which you are so weak," has labored through the years with an *emotional* handicap which would never have been imposed by parent or teacher if an adequate mental hygiene program had been provided in those early years. John Dewey has never been quite forgiven by old-line educators because he suggested that the safest urges or incentives in work were perhaps the things in the doing of which the child found happiness. There still lingers the idea that to be a discipline the thing must be unpleasant; this is the puritanism that has been so handicapping in the development of real culture; it is a denial of the fact that the two major urges of life—race preservation and self-preservation—are surrounded with the most pleasurable satisfactions known. Someone has suggested that New England's opposition in the early days to bear-baiting was not that it meant pain for the bear, but that it gave the on-lookers pleasure.

Psychiatry in its treatment of intelligent adults has learned many

things about the effect upon the individual of a repressive family situation in childhood or a school program that does not recognize the mental conflicts of the teacher as well as the maladjustments of the child. The "problem" adults need help as well as the "problem" children. The teacher who says: "Henry is an awful liar and thief and he is so tricky and impudent that I can't bear to have him enter my class-room," is perhaps presenting as big a "problem," psychiatrically speaking, as is Henry. The principal who says: "I'm through with William—he's no good and a loafer and doesn't deserve any consideration and I will not have him contaminating my school," is revealing his own emotional conflicts and personality difficulties.

The teacher who finds it necessary to compensate for inferiority feelings drops to the level of the child and competes with him on that level—a pitiable sight. A teacher says: "He cannot be restored to my class because that will give him victory and he will win out over me;" this represents a teacher who is striving for victory on a plane of the child's choosing in a battle of the emotions in which the cards are stacked against the child. Repeated defeats in this unfair competition often form the basis of a rebellious attitude toward all authority throughout the future, or may stamp the child with patterns of vacillation and morbid fear that may determine a life of failure and mental anguish. The chief complaint registered by parents and teachers against 50 per cent of the children brought to child guidance clinics is *disobedience*—going contrary to the wishes and commands of adults in authority; and all this is without the average parent or teacher really understanding the mechanism underlying her wishes and commands.

Some years ago the writer served on a Committee on the Health of Teachers of the New York State Teachers' Association. A study of over 2,000 teachers revealed that an appalling number after five years of teaching were suffering from some "nervous" disorder. This report probably is now buried in the dusty desks of dozens of school executives, but the item mentioned has a challenge today from the standpoint of mental hygiene.

Suicide and the epilepsies have decreased greatly in the last ten years chiefly perhaps as an expression of the result of the mental hygiene movement; the suicides, recently given so much publicity amongst not only college and secondary school groups but even in

the elementary schools, are but minor signposts that point to complex mental situations that teachers and educators in general are not yet prepared to acknowledge and deal with as vital questions in educational administration. Our normal schools, theological seminaries, law schools and our colleges should have courses in mental hygiene as an essential step toward securing a body of teachers, lawyers, judges and others who deal with social and educational problems that perhaps will appreciate at least the fundamental mechanisms of conduct and who may gain perhaps a more constructive insight into the composition of their own personalities.

Hon. William E. Thorpe, judge of Greene County and also judge of the Children's Court at Catskill, has had the courage to hold to quite the most interesting and constructive program that has anywhere been carried out. Several years ago he determined to dispose of cases coming to his court only after he had the results of psychiatric study of these cases. This stand called forth much local criticism and misunderstanding. Unlike many centers where *selected* court cases are examined, Greene County profited from such examinations as a *routine procedure*. It is worth noting that at one time since Judge Thorpe's plan went into effect the county jail was, for the first time in its history, without a prisoner, and, in addition, after his interesting method of probation with adult first offenders had been in operation for over a year he was able to report that he had not one lapse to record. Judge Thorpe, unlike many Children's Court judges, works closely with the school authorities and secures for school cases the psychiatric opinion that in smaller school systems may not be available as part of the school's technical organization.

The ideal school will also soon develop classes in parenthood and will organize nursery schools.

A recent mental hygiene survey of a New York State High School shows that the large group of "misfit," "maladjusted" pupils that seriously complicates the program of this school and colors with pessimism the feelings of the very capable principal, presents problems not alone because of low intelligence; the biggest difficulties are uncovered only when the *emotional reactions* of this group are studied, and here we find conflicts in which the school often plays only a minor part—conduct the genesis of which must be discovered in the *family situation* and in contacts outside both



home and school and in the inner, emotional life of these adolescents. Psychiatry alone can bring to a study of these complex conditions a technique which can aid the teacher to understand the human material toward which the school's duty must be discharged and to institute a program of treatment and training based upon scientific truth.

The sciences that are waiting to be more completely utilized in the service of education are sociology, psychology and psychiatry. A Pestalozzi is needed again to stimulate educators to look beyond *scholastic* landmarks, to discover the things that will advance these boundaries, and to broaden and humanize the domain of the professional educator. We have children who have not learned to read because of word-blindness or deafness or are listless because of malnutrition; some have special disabilities or are in conflict over various physical inferiorities; there is the large group with "shut-in" personalities who give teachers no trouble and are seldom reported because of maladjustment to the school program but who are far more in need of study and help than the excitable mental defectives who upset fifth grades; there is also the child of superior intelligence who is given but half his due when the school sees him only as an object to be properly classified and promoted to more advanced grades. It is the psychiatrist's business to consider the child from physical, social, psychological and psychiatric viewpoints and to correlate the findings and interpret the child "as a whole" to teacher, parent and to the child himself; the school situation, important as it is, is but one field of adjustment.

Too often the child suffers from the prudishness and the mental conflicts of the teacher or some adult to whom the child often looks mutely for guidance. This is illustrated in the case of two boys brought to us for examination preliminary to placement in a private home after several years of residence in an institution for children. The county agent who brought the children stated that the superintendent of the institution gave as the reason for asking that the two boys be removed, that they were a "bad influence on the other children because they used bad language," and because they got into an adjoining pasture and rode some horses about the fields. We overlooked a mere boyish prank in line with the wholesome instincts of these boys, aged 13 and 15 years, and asked them about the "bad language" they had used. One boy frankly confessed to the

use of "damn," which the cultured, college trained social worker agreed was part of her vocabulary *upon occasion* when the psychiatrist confessed to the same "sin"; the other boy said he had called a boy a "bastard" but hastened to assure the examiner that he didn't know it was a "bad word" until told by one of the adult officers charged with his supervision and training; he was greatly relieved when told by the psychiatrist that the word was found in the very best literature and that it was not a "bad word" in itself and that no "sin" could be attached to the use of it. Needless to say the examiner suggested placement in a good private home in preference to retaining these boys in an atmosphere where "badness" and "sin" lurked even in mere words.

There must arise among school people a better recognition of what constitutes a psychiatrist and how he and the psychologist and social worker must coordinate their activities. Most physicians know little psychiatry and no psychology; and most psychologists know no psychiatry and often know little real *clinical psychology*. The well-trained psychiatrist knows enough about educational measurements and the related work of the psychologist to respect this special technique and in a measure to evaluate the results; and the best trained educational psychologist, if free from emotional conflicts, recognizes his lack of contact with the *clinical side* of behavior problems—the various emotional angles to the conduct of the person who is not adjusting to his situations, many of which fall *outside* the school in their major genesis. The school, however, is the place where the bulk of this study and treatment must be carried out in seeking to help the child to an optimum adjustment to life; and surely, this is a recognized objective of modern education. At present teachers are apt to feel that if they know how the child reacts to certain scholastic tests and intelligence scales (essential as these results are in doing justice to the pupil) that they are prepared to deal with him as an individual.

Many problems *are* tied up in just this type of applied psychology, but far more are reachable only through the more recent formulations whereby the emotional life of the child is understood and the treatment and training accorded him are predicated upon such revealing study. It is much more important for the teacher to have her pupils love her than it is to pigeon-hole them according to their intelligence quotients; for if they love her she can teach the largest

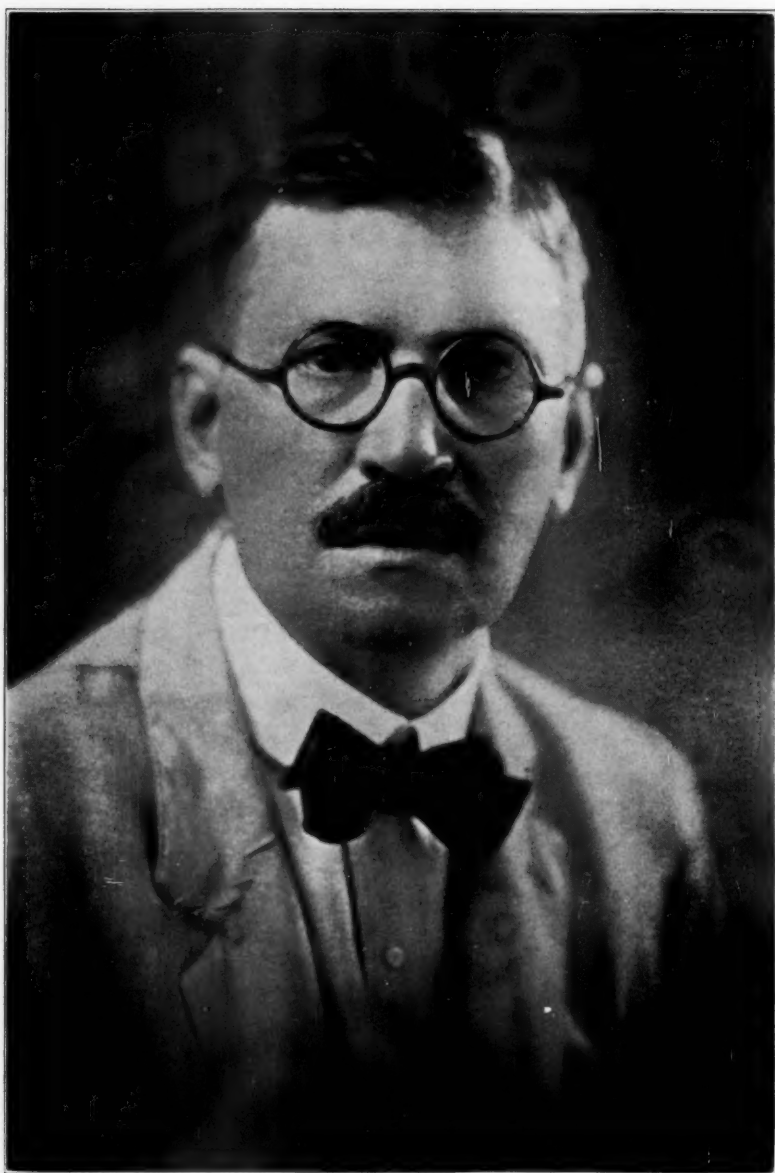
class without friction and with justice to all, even though the class be composed of pupils who range from feeble-minded to superior in the scale. Only psychiatry in association with psychology and social work can individualize the child and help teachers really to know their pupils; and only in this way can education and re-education (the mental treatment of a maladjusted person) be adequately projected. Someone has said that parents and teachers are not "potters, molding the clay, but gardeners, watering the bulbs." Psychiatry aims to prevent the tragedies in education, resulting from well-meaning persons trying to force tulip bulbs to produce hyacinths.

The confines of this paper preclude the possibility of developing the details of the approach that psychiatry offers to certain educational problems, nor can we hope to record the variety of concrete situations in the school program that invite psychiatric consideration if they are to be solved with economy to the State and with justice to the child. But we may indicate in a few closing sentences the outline of a minimum working unit which any modern, progressive school system should have available; these workers must function in closest cooperation for their contributions are intimately related and each is incomplete without the others. Such unit would include:

1. A psychiatrist with good training in psychology and with an educational viewpoint.
2. A psychologist who is more than a psychometric examiner and who, ideally should have the clinical viewpoint.
3. A psychiatric social worker, or, a specially trained visiting teacher with psychiatric insight, to relate the family situation to the problem presented in the child and to act as the biggest instrument in a program of treatment.
4. Adequate secretarial help.

This unit would necessarily be expanded in proportion to the size of the school system. Such workers are as essential to the proper application of the educational prescription or the preventive measures in a mental hygiene program as are teachers of music, physical education, industrial arts or English.





ISHAM G. HARRIS  
1867---1927



## IN MEMORIAM

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### Dr. ISHAM G. HARRIS

Dr. Isham G. Harris, psychiatrist, executive and hospital planner, died at his home in Brooklyn, N. Y., April 21, 1927, at the age of 60. For more than a year previous to his death he suffered from Hodgkins disease but had been confined to his bed less than two weeks. News of his death cast gloom over the institution of which he had so long been the head and produced the deepest feeling of sadness and personal loss among his many friends throughout the whole State Hospital System.

Dr. Harris was born in Lamar County, Texas, February 23, 1867, the son of John and Martha Reed Harris. He received his early education in the common schools of Texas and Tennessee. He studied for four years in the University of Virginia, two years of which were spent in the medical department. He, however, obtained his medical degree from the University of the City of New York in 1890. He then became resident physician at the New York Infant Asylum at Mt. Vernon, N. Y., and the following year entered the service of the New York Asylum for the Insane on Blackwell's (now Welfare) Island. He became first assistant physician of the Hudson River State Hospital in 1904, and superintendent of the Mohansic State Hospital in 1910. He was appointed medical examiner of the Bureau of Deportation of the State Hospital System, July 1, 1916, and resigned to become superintendent of the Brooklyn State Hospital, August 1, 1916.

During the World War he served as medical member of one of the local boards of Brooklyn, rendering active service. In 1921, he became professor of psychiatry in the Long Island College Hospital and continued in the service of the institution to the time of his death.

His extensive experience gave him an unusual breadth of knowledge of hospital conditions and keen insight into the needs of the patients; for the welfare of the latter he was a tireless worker and gave much attention to planning better hospital buildings and more expeditious methods of service.

His first noteworthy work in hospital planning was done in con-

nection with the development of Mohansic State Hospital. This institution was later abandoned because of its alleged menace to the water supply of New York City. Dr. Harris made a most careful study of the requirements of the institution and prepared a detailed plan of the buildings and grounds which was highly commended and would have been followed had the hospital been built.

Becoming superintendent of the Brooklyn State Hospital shortly after leaving Mohansic, Dr. Harris applied himself vigorously to the task of transforming this old institution into a modern hospital. How well he succeeded is shown by the fact that during the 11 years of his administration a new building for continued treatment cases, a new reception building, and a new administration building and staff house on the Brooklyn site were completed and occupied. Even more extensive developments took place during the same period on the site of the Creedmoor Division. Here two complete hospital units to accommodate 800 patients each were built. Besides helping to plan and oversee this work, Dr. Harris, as chairman of the Committee on Contruction of the State Hospital System, assisted in planning the Harlem Valley and Rockland State Hospitals. He was also called into consultation by supervisory boards of other states.

Dr. Harris was a member of the editorial board of the STATE HOSPITAL QUARTERLY from 1918 to 1927 and a contributor to other medical journals. He wrote several articles that attracted wide attention, one of the most significant being on "Problems of Psychiatry in the Metropolitan Area," which appeared in the QUARTERLY for August, 1918. In this paper he advocated the establishment of psychopathic hospitals and the extension of preventive work.

Dr. Harris was a member of many medical organizations, including the American Medical Association, the American Psychiatric Association, the New York Academy of Medicine, the New York Society of Clinical Psychiatry, the Brooklyn Neurological Society, the Flatbush Medical Society and the State and County medical societies. He was also a member of the American Occupational Therapy Association, the National Committee for Mental Hygiene, the Association for Research in Mental and Nervous Diseases, the American Hospital Association, the New York Society of Medical Jurisprudence, and the Retirement Board of the State Hospital System. He was affiliated with several fraternal and social organi-

zations, namely: The Masons, the Elks, the Montauk and Union League clubs of Brooklyn, the Amrita Club of Poughkeepsie and the Dutchess County Society.

Dr. Harris had a strong but congenial personality. He was frank and outspoken and wished others to be equally frank with him. As he was exceptionally well informed concerning hospital matters, his advice and counsel were of the greatest value during the recent developmental period. He had a splendid vision of the future of the State hospitals and of the Department of Mental Hygiene and though torn from the work by death, the vision he saw will serve as an ideal to others for many years.

His only surviving immediate relative, his daughter, Mrs. Josephine Harris Stark of Staten Island, was at his bedside when he died.

Funeral services were held at his late residence on Sunday afternoon, April 24, and were attended by the Commissioner of Mental Hygiene, members of the Board of Visitors of the hospital, hospital superintendents, prominent State and city officials and a large number of the staff and employees of the hospital. Following religious services, Masonic rites were conducted by the Kings County Lodge for Cortlandt Lodge, F. & A. M., of which Dr. Harris was a member. Interment was at Hyde Park, N. Y.

## MEMORIAL SERVICE IN TRIBUTE TO DR. HARRIS AT QUARTERLY CONFERENCE

A brief memorial service in honor of Dr. Harris was held at the opening of the Quarterly Conference at Letchworth Village, Thiells, N. Y., June 23, 1927. Tributes were presented as follows:

### TRIBUTE BY DR. FREDERICK W. PARSONS, Commissioner of Mental Hygiene

When shocked by a tragic occurrence it is proper to pause, to survey the damage and to estimate our resources. A courageous group, undismayed, girds itself anew and proceeds. This we now do and in a comparatively short time we have had other occasions to so pause and consider.

Isham G. Harris, a distinguished member of this Conference, departed this life since we last met. Within a brief space four men have passed on, leaving among their associates imperishable memories. The first in the group, a veritable mountain, physically and intellectually; the second, a man urbane, polished and pleasantly self-possessed; the third, a kindly, genial companionable individual; and now one in whom still other personal traits predominated.

He was bold, rugged and uncompromising where the welfare of patients was concerned, ever the advocate of improvement and more particularly in those physical arrangements which contributed to the comfort and convenience of the patients. He was broad and far-sighted in his institutional policies and an efficient administrator of a hospital which has unusual difficulties.

I spoke of courage. Harris had it. Shortly before the final throes of his illness, I spent a Sunday afternoon with him. We discussed first his work and mine. Over our association of twenty-five years both felt the shadow of somber wings. Finally he spoke of his illness about which usually he was reticent. He was in the hands of skilled physicians in whom he had confidence. He knew their estimate of his condition was correct and his medical knowledge told him there was but one outcome. He discussed the end, estimated the remaining short span yet before him and though racked with pain, unafraid and undaunted, looked into the eye of the grim spectre which stood between us. The mortal elements of him whom we commemorate today were marked for destruction, but the spirit was not and it still lives.

The spark of his indomitable courage we can fan into a flame and warm ourselves thereby. We can and should light the fire of our own altars from that kindled by him and go on with his work, struggling for the betterment of those to whom he gave all he had. I like to think that from some place on high he will see and approve.

TRIBUTE BY DR. GEORGE A. SMITH,  
Superintendent, Central Islip State Hospital

These meetings for tribute to our departed colleagues and comrades are becoming too frequent, and it makes me particularly sad, when I see those of the second generation of superintendents of my time pass away.

I have known Doctor Harris over 30 years. I first met him on a visitation to Poughkeepsie, when Doctor Pilgrim introduced him to me as a member of his staff. I have had occasion to meet him many times since. Since he became superintendent, I became more closely associated with him. I found him socially, as we all have—a jolly good fellow—and as a host he showed that natural hospitality of the South which was born in him. He liked a good joke, and could take a good joke; and we all know the Harris laugh. But he had a serious side to his life, which was his work, and great interest in the care and treatment of the insane. He was a scientific man. At the same time he did not forget the custodial side of the treatment and he tried to dove-tail the scientific with the custodial. In the matter of construction of hospitals, of which committee he was Chairman, and had great experience, he had no parallel as a superintendent in that matter.

At our conferences he always spoke right from the shoulder, not caring whom it hit, because he was honest in his opinion. Doctor Harris was called a rough diamond. I called him an honest diamond, a man whose heart and soul were with the progress in the care and treatment of the insane in this State. The State and the Department for the care of the insane have lost a great man, one to emulate.

Ten days before his death, I called upon him at Brooklyn, and much to my surprise and pleasure he met me at the Flatbush Avenue Station in his automobile. We drove together through Prospect Park to his home. In getting out of the automobile, with my rheumatic legs, I caught hold of his arm, and said: "You are better off than I, you can walk decently." He said: "What are the odds, Smith, as long as we have our heads, and our hearts are in the right place." He gave me his arm and we walked together to his house. I spent from three in the afternoon till eight at night with him. We had supper together. He had the same Harris laugh. He seemed optimistic as to what was to be the outcome of his condition. I little thought at that time that it was our last supper together. He had the same fire and determination in regard to his work as Chairman of the Construction Committee.

As I go down the broad avenue leading to the dock—this side of the River Styx—and I see these superintendents, some older, some my age, and others younger, pass me, I wonder why God leaves me, and can only repeat what I have said before, that possibly I have not become sufficiently qualified



to associate with them on the other side of that great river, but I can say that Dr. Isham G. Harris was qualified, and I can imagine—at the present moment, that he is happily associated with the great men of the service who have gone before, on the other side of that great river, while we, on this side, mourn his loss.

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TRIBUTE BY HONORABLE HUGO HIRSH,

President, Board of Managers, Brooklyn State Hospital\*

Eleven years ago, Dr. Harris called on me at my office and stated that he was an applicant for the appointment of superintendent of our hospital. I had never met the Doctor before, but was immediately impressed by his presence and conversation. I had then been a member of the Board for eleven years, having been appointed in 1905 by Governor Higgins. I had served as such member under several superintendents, and was therefore somewhat acquainted with the duties and responsibilities of that office, so I considered it incumbent upon me to cross-examine Dr. Harris on these matters. But I very soon found that my knowledge and experience concerning the duties of superintendent were superficial, while his knowledge and experience were wonderful. I use this word advisedly. He proved himself to me to be at this time, a man in every way capable of filling this position.

I thereupon called a meeting of our Board of Managers and had Dr. Harris appear before us, and it was the unanimous opinion of our Board that he should be appointed, and that the people of the State, the Brooklyn State Hospital and we, as a Board, were most fortunate in being able to obtain his services.

So Dr. Harris was appointed superintendent. As we became better acquainted with him, we learned to love him. We found him to be not only a great psychiatrist, but a splendid physician. We found him to be a superintendent in fact as well as in name. He knew all about the hospital. When repairs to buildings became necessary, or new buildings were to be erected, he knew all about the subject. He went carefully over the plans and gave his opinion concerning the needs of the institution and what changes were necessary in such plans, and his opinions, his suggestions were always sound. He knew the patients and their needs. He was a disciplinarian and believed that he and the medical staff of the institution were a mechanism to be used for the benefit of the inmates of that institution, who were the wards of the State. Service to him was a term of great meaning and he expected from others the same service that he gave himself—and he gave all of himself.

\* Read at Conference by Mrs. Grace Wilson Whitehall, secretary of the Board of Visitors of the Brooklyn State Hospital.

I do not mean by this that he was arrogant or dictatorial, or that he was a martinet. I do mean that he was a strong man, a firm man, yet a patient and most kindly man, but always having in mind the needs of the institution and its inmates.

To the members of our Board he was always a gentleman and we so appreciated his knowledge, experience and services that there never was a request made by him to us that was not immediately complied with. We were very fond of him.

I know that I speak for our Board when I say that we miss him; that his untimely demise is the cause of great sorrow to us and that we sincerely mourn his loss.

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#### MEMORIAL ADOPTED BY QUARTERLY CONFERENCE

The Quarterly Conference of the Department of Mental Hygiene in session at Letchworth Village, Thiells, New York, Thursday, June 23, 1927, records with profound sorrow the death of Dr. Isham G. Harris, superintendent of the Brooklyn State Hospital and desires to express its appreciation of his valuable services in the advancement of methods of care and treatment of the mentally diseased and to pay loving tribute to the outstanding qualities of his mind and heart which endeared him to all who knew him.

Dr. Harris died at his home in Brooklyn on Thursday, April 21, 1927, of an uncommon and incurable disease. He realized from the beginning of his illness its serious nature but notwithstanding this knowledge he continued in the faithful discharge of his duties. He thereby exhibited to the last that tenacity of purpose which was one of his outstanding characteristics.

The Conference will perhaps best remember Dr. Harris for the particular and valuable services he performed as chairman of the Committee on Construction on which he served for several years. He was a deep student of the subject and acquired a profound knowledge of the therapeutic and administrative values of various types of hospital construction. He contributed his knowledge to the preparation of plans for the Mohansic State Hospital, since abandoned, the new buildings of the Brooklyn State Hospital, and the Creedmoor Division of the latter institution. He also contributed to the preparation of the plans for the proposed Rockland State Hospital, the contracts for which were let by the Department a few days after his death. The splendid hospital buildings erected during the past fifteen years are in no small part monuments to Dr. Harris' skill, vision and wisdom.

Dr. Harris was born in Sylvan, Texas, February 23, 1867. He was edu-

cated at the University of Virginia and obtained his degree of Doctor of Medicine from the University of the City of New York in 1890. He entered the State hospital service in 1891, advanced through successive grades at the Hudson River State Hospital and became superintendent of Mohansic State Hospital in 1910 and superintendent of the Brooklyn State Hospital in 1916.

Because of his sincere devotion to his life work and his genial manner Dr. Harris was highly esteemed and warmly beloved by a wide circle of professional associates and personal friends. The Conference will long hold him in affectionate regard. When it last met at his institution, he, although ill, was a most charming host. To the State Hospital System he was a pillar of strength. To his friends he was loyal and generous, and to every cause designed to alleviate the suffering of humanity he was earnestly devoted. His death has removed from our midst a strong, courageous man with a lovable personality and a broad knowledge of institution matters.

MRS. GRACE WILSON WHITEHALL,

R. H. HUTCHINGS,

LEWIS M. FARRINGTON,

*Committee.*

## BOOK REVIEWS

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**Applied Chemistry for Nurses.** By JOSEPH L. ROSENHOLTZ, Ph. D., Assistant Professor of Geology in the Rensselaer Polytechnic Institute and Lecturer in Chemistry in the School of Nursing, Samaritan Hospital, Troy, New York. Edited by Alice S. Gilman, Secretary, New York State Board of Nurse Examiners. W. B. Saunders Co., Philadelphia. Price \$2.00.

This little book of 220 pages, 138 of which are devoted to the theory of chemistry, is well adapted to the short course assigned in a general training school for nurses.

The author points out that a knowledge of chemistry cannot be grasped in the brief period of a few hours allotted to both theory and laboratory, but he attempts to treat the fundamental concepts by describing in the first two chapters some of the basic laws of physical and chemical changes. His ideas are expressed clearly in simple terms and can be easily understood. At the end of each chapter are ten or a dozen questions which bring out the main points and should fix the definitions and laws in the mind of the nurse.

In the second part of the book are some thirty experiments which parallel the theoretical part.

Six chapters of inorganic chemistry deal with the main elements in a terse but comprehensive manner.

When the author takes up the organic compounds I fear he is too abrupt in his approach; he takes the nurse into deep water without adequate preparation and leaves her immersed in open chain aliphatic compounds and closed chain aromatics. However, if she can survive the chapter on hydrocarbons, alcohols and ethers she finds shoal waters in the carbohydrates, proteins and fats, where the author presents the chemistry of digestion in a concise but clever style.

The subject matter contained in this book should prepare the nurse for any examination for final hospital or state board tests, and forms a firm foundation on which to build her knowledge of physiology and pharmacology.

In the appendix one finds a list of the equipment and stock chemicals needed for the laboratory experiments.

GRAY.

**Bacteriology for Nurses.** By MARY E. MORSE, M. D., Assistant Pathologist to the Boston Psychopathic Hospital, Second Edition, Reset, 12 mo. of 266 pages with 61 illustrations. W. B. Saunders Co., Philadelphia. Price \$2.25.

This, the second edition, has been completely rewritten and brought up to date with considerable new material added.

The purpose of this volume is evident from the title and the author has succeeded in her effort to keep the discussion simple without the use of highly technical terms, therefore the book is easy to read and at all times clear.

It should be useful to State hospital training schools which have the necessary laboratory facilities for carrying out the experiments and demonstrations that parallel each chapter and suggest practical methods of emphasizing points made in the body of the book.

The early chapters, in a simple style, describe the structure of bacteria, their relation to other forms of life and their distribution in nature. Then we learn how the bacteria works in the soil, in foods and the human body, some taking a useful part, others producing disease.

Single chapters are devoted to certain specific bacteria with adequate descriptions of methods of disease prevention.

In a discussion of aseptic technique particular stress is made upon the development of the "aseptic conscience, a conscience that will not allow the nurse to cut short by a quarter of a minute the time for sterilizing instruments or scrubbing her hands."

Special chapters on the prevention of tuberculosis, typhoid and venereal disease are interesting and forceful.

In the chapter on malaria the author shows she has not kept in close touch with the literature on the treatment of general paralysis for on page 185 she states "man can acquire malaria only through the bite of an infected mosquito."

This work fills its place very well, the arrangement of the text is logical, each chapter, while concise, is clear and gives all the knowledge necessary for the nurse of the subject so the book is not only valuable for general reading but is adequate for teaching purposes.

GRAY.

**Postencephalitic Respiratory Disorders.** By SMITH ELY JELLIFFE. Nervous and Mental Disease, Monograph Series No. 45, Page 135. Nervous and Mental Disease Publishing Company, New York and Washington, 1927.

Since 1917, when the term lethargic encephalitis was brought into prominence by Von Economo, epidemic encephalitis has held the attention and



interest of the medical profession. Today this disease with its sequelae holds a position of extreme importance in the field of neuropsychiatry.

Among its chronic manifestations those involving respiratory behavior have been accorded a prominent place in the literature.

According to Jelliffe these manifestations stand out as possessing dramatic qualities, and offer many opportunities for extensive as well as intensive research. He would consider them as a behavior disorder, rather than as a disease of the respiratory mechanisms.

This monograph is concerned with these persistent respiratory disturbances, and the material is presented as a review of the syndromy, case reports, physiopathology, psychopathology and therapy.

Reference is made to the older literature where these disturbances were spoken of as hysteria, hysterical-tics, cramps, etc. But gradually they were recognized as forming well defined and important sequelae, alone, or in combination with other sequelae of epidemic encephalitis.

Reports in brief abstract form of observations of these respiratory phenomena, from 1921 through 1925 are submitted: It is noteworthy that practically all of the numerous observations mentioned deal mainly with the descriptive phase of these disturbances. A few investigators, including the author, attain to the goal of therapy.

The reading of this part of the book might be considered tiresome and burdensome to a large number, but to the physicians who wish to keep in touch with the advances of medicine and haven't the time to read the original articles, it will prove to be a source of valuable information.

The author reports two of his own cases which displayed this respiratory behavior. These reports are splendid examples of exhaustive examinations and very careful observations. A review of such studies indicates the necessity of a thorough searching out of the individual's life reactions and a careful correlation of data in order to avoid the overlooking of what are spoken of as "encephalitis" signs. Neglect of this method of approach may lead to an incorrect diagnosis, because of the apparent resemblance of this type of case to the psychoneuroses and dementia præcox.

Jelliffe's description of the respiratory behavior in these cases is so vivid and the photographs and film studies so accurate that one can actually visualize the reactions.

A brief review of certain patho physiological situations and psychical coördinates bearing upon the comprehension of the picture of the chronic respiratory behavior is given. Tachypnea, the apneic phase of the respiratory phenomena, sighing, yawning episodes, tic-like grimaces, spasms, breath-holding, etc., are discussed in considerable detail.

Breathing attacks according to most observers are under some sort of voluntary control. Emotional stimuli are of much moment in inducing or modifying them.

The somatic pathology of the respiratory syndromies is presented in such a manner that one who does not possess the scientific acuity of a Jelliffe may find the reading of it somewhat confusing.

The purpose behind the respiratory behavior is sought for by the author and clearly demonstrated through a psychoanalytic investigation of his two cases. The facts deducted are correlated with those indicated by the other investigators. Instincts are considered and some of the principles of Freudian psychology briefly stated. Freud's principle of the "repetition compulsion" is cited in connection with the respiratory behavior. Several dreams from his cases are given, and their interpretation presented in a clear, concise manner. The mechanisms of repression and regression are clearly shown as playing a role in the development of the phenomena.

The reviewer from his own experience with such cases is in accord with the author that the oral-nutritional and analsadistic components are active in these respiratory reactions.

The author using the regular Freudian method of analysis states that the attacks ceased completely and have remained absent for 18 months in his first case. The second apparently is still undergoing therapy.

There are a few pertinent remarks concerning epidemic encephalitic as a whole and a brief discussion of the innumerable therapeutic measures. The author draws the conclusion that one needs to get a sympathetic understanding of what is going on in these patients with damaged brains in order to hope to get anywhere.

According to Jelliffe the psychoanalytic findings reveal an extremely interesting situation, namely, the organism is doing the best it can with the parts of the body still capable of functioning. He indicates that the respiratory behavior is but one of the symptoms, even in so-called respiratory cases, other behavior anomalies are manifested. It is the experience of the reviewer that such anomalies in this type of case are also manifestations of repression and regression and disappear with the respiratory disturbance if the analysis is successful.

The author does not hold out a panacea in this type of reaction but it is his conviction that a psychoanalytic mode of approach offers the most hopeful avenue of success.

This monograph is a real contribution to the science of medicine. It deserves the careful perusal and consideration of the profession.

WITZEL.

**The Influence of Music on Behavior.** By CHARLES M. DISERENS, Assistant Professor of Psychology, University of Cincinnati. Princeton University Press.

This book is an extensive examination of the literature on the reaction of animals to music, music in myth, music in magic, the influence of music

on the sick, the influence of music on work, a history of the experimental work on reactions to musical stimuli, together with an experimental study of the influence of music on behavior by the author himself.

The author seeks to confirm the traditional Darwinian theory of the origin of music as an agency in sexual selection, which of course is purely speculative and theoretical and admits of no verification. He is even unwilling to entertain Wallace's dissent from the Darwinian view in that he held that man represents a psychological break in the continuity of evolution. He makes an elaborate defense of the evolutionary viewpoint.

His method is genetic and experimental. He takes account of the social phenomena connected with the development of music, such as are observable in myth, ritual, medicine, and the evolution of work, and of the results of experiment on individuals. He rejects experimentation with mere isolated elements of music as valueless, since in music we are not interested in responses to isolated tones, but with music as a product. The simple elements of music are no more music than the letters of the alphabet are literature. All this is sound, and he wisely chooses organized musical materials or actual musical selections for his experimental investigations.

It appears that only few experimental studies of the effects of music on animals exist and these naturally were made on caged animals. It is curious and interesting to learn of the effects of music on insects, bees, spiders, and the like. Lizards and snakes are peculiarly susceptible to music. The subject is uniquely interesting relative to birds. Among mammals, seals are very fond of music, and certain rodents are notably affected by music, and the legend of Browning's *Pied Piper* is founded on the fact. Antelopes, elephants, hippopotami, tigers and domestic animals all respond to various kinds of music with interest or resistance. Interesting studies have been made on the effects on the circulation of the blood, animal thermogenesis, and the like.

Music in myth and magic has naturally played a large role. A specially suggestive item of inquiry is the relation of synaesthesia to primitive magical practice.

To the readers of this journal, the discussion of the influence of music on the sick will be of greatest interest. Kircher thinks that every composition has its own peculiar time, place, and most favorable season. Hence music must be adapted to the patient according to his mood. The motion of musical therapy dates from the remotest antiquity, and is current among practically every primitive people today. The ancient Egyptians called music "physic for the soul." The Greeks made Apollo at once the god of music and of healing. The Pythagoreans made music the cure of every disease. During the Middle Ages the St. Vitus's dance was treated by musical therapy. Philip V of Spain and George III of England found relief from

melancholy in the solace of music. The physiological theory of musical therapy as a cellular massage is suggestive, and finds favor with Jaques Loeb. A detailed review of the book is impossible in the space at command. Parts of the book are valuable to medical science.

GEORGE S. PAINTER.

**Modern Methods in Nursing.** By GEORGIANA J. SANDERS, Formerly Superintendent of Nurses of the Polyclinic Hospital, Philadelphia, and the Massachusetts General Hospital, Boston. Fourth Edition, 12 Mo. 878 Pages, 222 Illustrations. W. B. Saunders Company, Philadelphia and London, 1927. Price \$3.00.

In this fourth edition the author has revised and modernized this standard work so that it conforms to present-day nursing procedures; much new matter also appears which adds greatly to this value. The type is excellent, the paper of good quality, the chapter heading are clearly and concisely outlined, the subject matter logically arranged, and practically all the necessary nursing procedures are described. The illustrations add to the clarity of the text. The book is a very readable one and a fine index is provided.

To student nurses it will serve as an excellent text and reference book and the private duty nurse will find it most serviceable in reviewing nursing methods. It should certainly be in the library of every training school.

TADDIKEN

**Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord.** A concise introduction to the principles of clinical localization in diseases and injuries of the central nervous system. By ROBERT BING, Professor in the University of Basle. Translated from the sixth German edition by F. S. Arnold, B. A., M. B., B. Ch. (Oxon). Third edition revised and enlarged with one hundred and two illustrations. C. V. Mosby Company, St. Louise, 1927. Price \$6.00.

The appearance of a new edition of "Bing's Compendium" will be welcomed in medical circles. The fact that the book has gone through six editions in German and this is the third in English attests its importance in the field of neurology. Its value lies in the arrangement of the subject matter and the clearness of the descriptions of anatomical relations. The numerous illustrations and diagrams, many of which are in colors, are carefully chosen and well executed, admirably supplement the text. Dr. Sidney I. Schwab, who writes an introduction to the American edition, makes this suggestive remark: "It is well known that books with this purpose form the solid ground work upon which increased knowledge of the nervous system can be built up. From physiology and anatomy in its broadest sense will come an understanding of the infinitely more complex states of dis-

ordered function, the neuroses and psychoses which unfortunately cannot at the present time have such a compendium as a guide. It is to be hoped that some time in the future a similar compendium will be available for the study of these situations and that it will have something of the same precision, accuracy and definiteness so characteristic of this book."

The mechanical make-up of the volume is in the best style of the well-known publishers. A carefully prepared index adds to the usefulness of the compendium.

HUTCHINGS.



## GROUND BROKEN FOR THE NEW ROCKLAND STATE HOSPITAL

Governor Smith on the morning of May 18, 1927, began the work of construction of the Rockland State Hospital by operating the steam shovel which removed the first scoop of earth on the hospital site near Orangeburg, Rockland County. Brief addresses were made by the Governor and by William M. Chadbourne, chairman of the Executive Committee of the Citizens' Committee on Protection of the State's Unfortunates. Governor Smith declared that "we need a new State hospital like Rockland at least every three years to keep pace with the growth in the number of the committed insane, and this means that we need at least \$12,500,000 every three years for this purpose."

The Governor said it was not possible to raise this by current taxes and declared that the State is face to face with the necessity of another bond issue for construction of State hospitals and other State institutions.

Even after all the accommodations to be provided from the proceeds of the \$50,000,000 bond issue of 1923 are available, he estimated that the overcrowding in the State hospitals will still be about 5,000 in 1929. The present overcrowding is about 10,000, and the Governor stated that the increase in the census of the State hospitals during the past year was approximately 2,000, the largest increment of any year in the history of the State.

Continuing the Governor said: "This is the first wholly new State hospital started in the State in nearly 30 years. The last new State hospital, that at Gowanda, Erie County, was established in 1898. Since then, a division of the Utica State Hospital has been established at Marcy, and a division of the Brooklyn State Hospital at Creedmoor, Long Island. We are converting the former Wingdale Prison into a State hospital, but this is the first entirely new institution in 29 years.

"We are making progress in obtaining relief from overcrowding and in eliminating fire hazards as a result of the comprehensive construction projects which are being carried out under the \$50,000,000 bond issue, but we have by no means reached the end of this problem. The State hospitals are today overcrowded about 30 per cent and the census is growing so rapidly that we can't catch up

with the need for accommodations. In my opinion, we never will be able to do so from current revenues. The State needs to borrow substantial sums on its credit, so that money will be available for necessary construction and we will not be dependent upon the whim and wish of each succeeding Legislature.

"Our present plan of development, which is being carried out under the bond issue, will provide for a greater increase in the number of beds than in the previous 20 years, but much more remains to be done.

"The Citizens' Committee on Protection of the State's Unfortunates appointed by the State Charities Aid Association did important work in urging the passage of the proposal for the bond issue through the Legislature and in arousing the public to the importance of approving it at the polls in 1923. I hope that we will have the fullest cooperation in further efforts to relieve overcrowding and to do away with patients sleeping on the floor and in corridors.

"With all our great wealth, power and natural resources, we can offer no better prayer to God Almighty than to press for proper care of the sick and afflicted in mind, who are His special charges as well as ours."

Mr. Chadbourne in his address declared that government was becoming more efficient and economical than ever before. "This is an occasion worthy of note in more than one respect," he said.

"Work is about to begin upon the largest and most modern hospital for the insane in the State of New York. Designed to serve New York City it is located, as it should be, within easy reach of the metropolitan area so as to facilitate visits of relatives and friends. Those qualified to speak tell us that the hospital will be in every respect worthy of the Empire State.

"The project is eventful for another reason. It typifies a new efficiency in democratic government and justifies our faith that this country will be able to fulfill the obligations imposed upon it as a result of the power which has come to us in consequence of the World War.

"Both in nation and in state the government is more efficient and economical than ever before. An American of twenty years ago would have deemed ridiculous a prophecy that today our national government would be functioning under an efficient budget system. Similar things are happening in New York. The State

is going about the construction of its buildings in the same way that the most efficient private corporation would. Raising the money by bond issues, it has been able to plan ahead and secure economies in cost through letting large contracts.

"Best of all there have been no politics in the spending of the money.

"I had the honor to be Chairman of the Executive Committee of the Citizens' Committee which supported the \$50,000,000 bond issue. This committee appealed for aid in the campaign to the Republican and Democratic State Chairmen. Both agreed that the bond issue was desirable and gave it their wholehearted support.

"The bond issue having been approved by the people, Governor Smith, a Democrat, and Speaker Machold, a Republican, asked that the Committee continue in existence for the purpose of aiding the authorities in seeing that the money was spent to the best advantage.

"Under the terms of the bond issue amendment, \$12,500,00 was to be spent each year for four successive years. The program for each year was carefully studied by the Citizens' Committee in collaboration with the heads of the various State departments and others in each case the projects selected were approved by the Citizens' Committee as wise and desirable. A Democratic Governor and a Republican Legislature agreed on these programs and the money was voted accordingly.

"What has been accomplished ought, I think, to be a lesson to those of our fellow citizens who are prone to criticize and so-called politicians. If these critics were to seek the cooperation of the party leaders in support of their projects they would, I know, find them as patriotic and as anxious that the right thing be done as Governor Smith and the Republican leaders of the Legislature have shown themselves to the hospital program."

The Governor operated a steam shovel, which scooped out the first earth for the foundation of the Administration Building. He drew a laugh from the crowd when he explained that he didn't "expect any trouble from union labor employees on the job because he had a card of membership from the Shovelers' Union of Albany.

The new State hospital is planned to accommodate about 3,800 patients. When complete it will consist of about 50 buildings and it is estimated that it will cost about \$13,000,000 including site, buildings, utilities and equipment.

## DR. MILLS APPOINTED SUPERINTENDENT OF BROOKLYN STATE HOSPITAL

Dr. George W. T. Mills, medical inspector for the Department of Mental Hygiene, was appointed superintendent of the Brooklyn State Hospital on June 8, 1927, and assumed the duties of the position on June 20. He succeeds Dr. Isham G. Harris who died April 21, 1927.



Dr. Mills was born in Sayville, N. Y., in 1880 and received his preliminary education in the grammar and high schools of that village; his medical education at the University and Bellevue Hospital Medical College, graduating therefrom in 1902.

A two - and - one-half - year internship in one of the New York City hospitals with a mixed medical and surgical service was followed by six months as ship surgeon on a boat plying between

New York, the West Indies and South America. Dr. Mills entered the New York State hospital service as junior assistant physician at Buffalo, April 21, 1906, and was transferred to Central Islip in

September of that year. He advanced through the medical grades at that hospital and was appointed clinical director July 1, 1918, and medical inspector for the State Hospital Commission, July 1, 1924.

On April 27, 1910, Dr. Mills married Hildagarde A. Austin, at Washington, D. C.

At the Panama Pacific International Exposition in 1915, Dr. Mills represented the New York State Hospital System during the months of May, June and July.

He is a member of the Suffolk County Medical Society, the New York State Medical Society, American Psychiatric Association, New York Society of Clinical Psychiatry, Society for Research in Nervous and Mental Diseases, New York University and Bellevue Hospital Medical College Alumni, and Nu Sigma Nu fraternity and Alumni.



## WHY SUICIDES?

During the first four months of 1927, 25 student suicides were reported in this country. The wide publicity given these cases, and the discussion of the so-called suicide wave by editors, preachers, and the public generally have given the whole subject of suicides great prominence at this time.

Many theories have been advanced to account for the desire of these students to take their own lives. One minister is quoted as saying: "It's atheism more than anything else. The college boy is taught to believe that he is only an animal and so he acts like an animal. But since he's human, with a soul, sooner or later he comes to grief. And if he hasn't the spiritual strength to fight his way to the right path, he'll commit suicide." Another said: "It's really not a moral problem at all. The young people simply can't stand the speed. It's not hard to understand that when the whole younger generation has chased thrills long enough it'll be dissatisfied and disappointed." Hence this beginning of a real suicide wave. A New York physician attributes the suicides to the sense of inferiority transmitted to students by underpaid professors. A prominent magazine writer says that the modern college youth has adopted a philosophy which holds that self-effacement is something noble and heroic; but the same writer states that some students kill themselves to make their parents feel sorry. These are samples of the loose talk that has been freely circulated.

It is clear that the subject lends itself to limitless discussion because most people have no real knowledge concerning it. Instead of diagnosing the problem and prescribing a remedy without reference to the facts, we would suggest that a thorough inquiry by competent psychiatrists into the causes of a large number of student suicides might lead to a better understanding of the whole problem and possibly to the adoption of effective preventive measures.

We know that a suicidal tendency is generally a symptom of mental disease, an accompaniment of a depression in which the afflicted person shuns, withdraws from, or fears to face the issues of life. The depression may be brought on by physical illness, bitter disappointment, severe losses, death of a much-loved relative or friend, fear of social disapproval, or by many more obscure causes. Sometimes an abnormal attachment to either parent may unfit an adol-

escent youth from taking his proper place in society, or lead him to exaggerate the difficulties he may encounter in school, college or work. Many a person, either through inheritance or through improper environment or training has become a psychopathic personality and is susceptible to unfavorable influences of all kinds. Such a person meets the ordinary problems of life with difficulty, and is very likely to break down completely when faced with a real crisis. Some who find ordinary life intolerable take refuge in a world of phantasy and sooner or later become patients in a hospital for mental disease; others, more impulsive, may seek relief by destroying themselves.

These are some of the ways self-destruction may be induced. We cannot tell from newspaper reports whether these or other causes were the determining factors in the recent student suicides. We feel that so distressing a series of events is worthy of more thorough study. Certainly no relief can be expected from idle gossip or casual opinions.

#### A PARIS INVESTIGATION

A recent issue of the *Annales Médico-Psychologique* contains an interesting description by Dr. Suzanne Serin, of study along the lines above suggested conducted by the staff of L'Hôpital Psychiatrique Henri Rousselle, extending over a period of twenty months, terminating in October, 1926, as to suicides and suicidal attempts occurring in the city of Paris within that period.

The inquiry was made along the following lines: As soon as mention of the occurrence of a suicide within the city appeared in a journal of standing, note was taken thereof. In cases where death supervened immediately a member of the hospital staff was detailed to visit the person's former domicile in an effort to collect information concerning his antecedents and as to the incidents immediately preceding the actual tragedy, to discover, if possible, the impelling motive for the act. In other cases, i. e., of attempted suicides, the author, Dr. Serin, visited the patient subsequently either at his home or at the hospital to which he had been committed, in an effort to make a mental study of the case. Her inquiry covered not only cases presenting evidence of mental disease necessitating commitment but also those in which no indication of actual mental disease existed. There remained a third class which the inquiry could

not reach, comprising suicides in the families of the well-to-do, where, as might be expected, it was kept entirely under cover by the relatives; unless, perchance, the suicide was committed in a sensational manner making it impossible to prevent publicity.

Some of these suffered from the sequelae of lethargic encephalitis and showed few psychotic symptoms.

Heredity played a minor positive rôle, as less than 8 per cent cases presented a psychotic hereditary taint.

In 420 suicides investigated in the period, 230 were men, 173 women, while 17 were children under 18 years of age. Two hundred were single, 138 married, 41 widowed and 24 divorced.

Although at the time of the inquiry both the hospitals and prisons of Paris contained large numbers of foreigners, very few suicides were found among certain of these inmates, being negligible among the Russian, Polish, Belgian and Italian residents therein.

Professions and trades represented largely in the people investigated were, in the order of frequency, artisans, journalists, laborers, housewives, factory operatives, pensioners or persons without occupation; there were also noted kept women and public prostitutes. Means of self-destruction comprised shooting, drowning, hanging, asphyxiation either by gas or charcoal, poison, cutting the throat and by running in front of railway trains.

Former French psychiatrists (and the list includes Esquirol, Falret and Moreau de Tours) maintained the opinion that every attempt at self-destruction indicated positive mental disturbance. Contemporary alienists, however, and among them Brierre de Boismont, Durkheim, Proal, and, still more recently, Pfersforff, are less positive.

In the cases under consideration a considerable proportion—one-third to be exact—of the suicides were planned and executed without any discoverable trace whatever of psychotic taint. In this class of non-psychotic cases the motives most commonly assigned were private sorrow, death of wife or husband, abandonment, betrayal and loss of children.

Fifty suicides, mostly of elderly people, and without any discoverable taint of mental trouble, were attributed to wretched living conditions and to reverses of fortune. Forty-four were attributed to fear of painful, lingering and incurable illness, such as cancer, tuberculosis, etc.

Seventeen children ranging in age from 7 to 18 appeared in Dr. Serin's list; nine of these were girls and seven boys. The majority of these suicides occurred around the age of puberty; the act was largely an impulsive one; and on several occasions presented theatrical elements and followed reprimands or threats of punishment.

Dr. Serin's conclusions were:

In 117 cases the suicides might possibly have been prevented, i. e., of those who had announced their plan of self-destruction or whose change of circumstances had been such as to motivate an attempt at suicide. Hospital treatment and tactful supervision would have been of service in these and other types suffering from mental and physical inferiority and depression, but not of a kind to justify commitment to a hospital.

Cases of mental instability due to faulty up-bringing were not so easy to help. The suicidal act was impulsive. Medical care would not meet the situation. Proper guidance in early childhood would alone have insured a better mental balance and obviated these tragedies. Suicides resulting from mental upsets were found to have been easily prevented through immediate action and a timely hospital internment. Even with the restricted activities of the committee of inquiry it was able to render very considerable help where the attempt at suicide had not been successful. Provision was made by the committee for the admission of these cases to the open wards of hospitals, and dispensary and clinic service was procured for them with beneficial results.

## ESSENTIAL FACTORS IN HEALTH PROGRESS

The Review for 1926 recently issued by the Rockefeller Foundation sets forth the activities carried on in various parts of the world for the promotion of health and gives the following valuable summary of the essential factors in health progress from the present-day viewpoint.

“First of all, research must be encouraged and intercourse with world centers of investigation must be kept up, in order to have the essential scientific basis for effective work. In the second place the medical profession must be intelligent and sympathetic. The physicians of a country can make or break a public health program. It is they who diagnose maladies, report cases of communicable disease, educate their patients, make health examinations, give advice about personal hygiene, influence public opinion.

“It makes a world of difference whether practitioners are wholly devoted to individual ills and curative medicine or are committed to the modern idea of prevention. The progress of public health is largely due to the leadership of doctors of imagination and public spirit. To its medical schools a country must look for the kind of training and idealism which will produce doctors of the new type. Medical education is a vital factor in the development of public health.

“Again, the different kinds of officials and special workers must have technical professional training. Public health is not something to which anyone may turn without appropriate preparation. Furthermore central services of many kinds must be set up; statistical bureaus, laboratories for diagnosis and for the production of vaccines, sera, and antitoxins, departments of communicable diseases, infant welfare, public health nursing, venereal diseases, popular education, and others.

“Still further, a system of organization—rural, municipal, State, or provincial, as well as national—must be created and official relations of authority and cooperation clearly laid down. Sanitary laws and codes must give authority. Appropriate salaries, protection against political influence, retiring allowances, social recognition must attract and hold men and women of the highest type of professional efficiency and personal character.



“Finally, the public must be brought, through the education of children, the wide diffusion of information, and the concrete services of clinics, health centers, and visiting nurses, to appreciate and support the idea of preventing disease and of promoting health. In a democracy at any rate, public opinion cannot be ignored, whatever the temptation of the health officer to envy the hygienic efficiency of military camps or of such an expert’s paradise as the Panama Canal Zone.

“To sum up: The effectiveness of a national system of public health service depends upon the appropriate and cooperative development of scientific research; medical education; the training of health officers, laboratory workers, engineers and nurses; the creation of central services; the organization of administrative units; the enactment of appropriate legislation; the provision of adequate funds; and the development of sound public opinion.”

## DEED GIVEN BY PATIENT IN STATE HOSPITAL VOIDABLE BUT NOT VOID

An interesting case relating to the transfer of real property by a patient was decided by the New York State Court of Appeals May 31, 1927. J. Howard Finch was committed as an insane patient to the Hudson River State Hospital September 16, 1920, by order of the judge of Greene County under the provisions of section 80 of the Insanity Law. At the time of commitment, the patient was the owner of a farm. On June 30, 1921, while still a patient in the hospital, he conveyed this farm to David Goldstein, the defendant in the case, taking back a purchase money mortgage. This mortgage Goldstein failed to pay and action was brought by the patient's committee for its foreclosure.

The defendant Goldstein knew at the time conveyance was made that patient was insane and that he was confined in a State hospital for the insane, nevertheless he took possession of the property and at the time the action was commenced it was still in possession.

In April, 1925, Winnie Finch was appointed committee of the person and property of J. Howard Finch pursuant to provisions of Section 1356 of the Civil Practice Act, the order therein declaring the said Finch to be incompetent and incapable of handling his property. The committee duly qualified and brought an action ratifying the conveyance and seeking the foreclosure of the mortgage. Goldstein set up as a defense that as the patient was incompetent at the time of conveyance the deed was therefore void and demanded that the purchase price be returned to him with interest.

The court held that the deed was not void but voidable at the election of the incompetent or his committee, thus sustaining decision in *Blinn vs. Schwartz*, 177 N. Y. 252 at page 262 and *Smith vs. Ryan*, 192 N. Y. at page 452. It was held that until appointment of a committee neither the State or anyone else has power or control over the property of the patient or any authority to act in his behalf. He alone remains in possession of his property and can dispose of it. If he be incompetent his acts may be set aside by himself or by a committee subsequently appointed. His acts are thus voidable, not void.

The purpose of the State hospital is to look after the person of the incompetent and has nothing to do with his property except as it may be charged with the expense of his maintenance.

Judgment of the Appellate Division of the Supreme Court ratifying the sale and awarding a judgment of foreclosure was affirmed.

## THE CINCINNATI MEETING OF THE AMERICAN PSYCHIATRIC ASSOCIATION

The annual meetings of the American Psychiatric Association combine science with sociableness and the pursuit of wisdom with the joys of good fellowship. The Cincinnati meeting was no exception. The program abounded in scientific material of high order from the able address of President Kline at the opening to the profound paper by Dr. William A. White at the close. The interest of the members was well maintained throughout the entire meeting. Unfortunately, the acoustics of the meeting room were bad, so that hearing in the outer rows of seats was difficult. As similar conditions are frequently met with, it is suggested that an amplifier would make the papers much more effective.

The social side of the meeting was skillfully planned and managed by the local Committee on Arrangements, of which Dr. E. A. Baber was chairman. The boat ride on the Ohio was delightful. The luncheon given by the American Laundry Machinery Company at its plant in Norwood was an event long to be remembered.

Two committee reports of great significance were presented; the one by Dr. Clarence O. Cheney, chairman of the Committee on Medical Service, dealt with the problem of the doctor in hospitals for mental disease; the other by Dr. Karl A. Menninger, chairman of the Committee on the Legal Aspects of Psychiatry, set forth an advanced program to be pursued by the Association. The keen interest manifested in both of these reports shows that the members are deeply concerned with matters pertaining to the upbuilding of the institutions, and the adaptation of psychiatry to wider uses.

Secretary Bond reports that 277 members and 184 guests registered during the meeting.

Officers for the ensuing year were elected as follows: President, Dr. Adolf Meyer of Baltimore; vice-president, Dr. Samuel T. Orton of Iowa City, Iowa; honorary vice-president, Dr. G. K. Collier, Rochester, N. Y.; secretary, Dr. Earl D. Bond, Philadelphia.

Minneapolis was chosen as the place of the next meeting.

The National Association for the Study of Epilepsy which met in Cincinnati the same week voted to become a section of the American Psychiatric Association.

## ORGANIZATION OF NEW YORK CITY COMMITTEE ON MENTAL HYGIENE

At a meeting of representatives of charitable organizations and institutions held in the office of the State Charities Aid Association in New York City on May 6, it was decided to establish a City Committee on Mental Hygiene. This committee will function as a local committee of the State Committee on Mental Hygiene of the State Charities Aid Association. The general objects and purposes of the new organization are stated as follows:

To bring together representatives of all agencies now carrying on mental hygiene work in New York City, for common effort.

To obtain information about mental hygiene work now being carried on.

To determine unmet mental health needs.

To promote the development of a well-rounded mental hygiene program for New York City.

As one of its first activities the committee plans to make a survey of the mental hygiene work now being carried on by the public schools and social agencies. It also hopes to conduct a campaign of education relative to the phases of mental hygiene.

In cooperation with the State Committee on Mental Hygiene, the city committee will serve as a bureau of advice and information concerning matters relating to mental health. It will also cooperate with State departments and institutions in securing progressive legislation for the care and treatment of the mentally ill and for the extension of preventive measures.

The new organization elected officers as follows: Chairman, Dr. C. Floyd Haviland; vice-chairman, Mrs. Sidney C. Borg; executive secretary, Stanley P. Davies.

**SCHEDULE OF SALARIES OF OFFICERS IN INSTITUTIONS IN  
NEW YORK STATE DEPARTMENT OF MENTAL  
HYGIENE, EFFECTIVE JULY 1, 1927**

Resident officers	Minimum	Maximum	Annual increase
Medical superintendent .....	\$4,000.00	\$6,000.00	\$500.00
First assistant physician.....	3,200.00	4,000.00	300.00
Clinical director .....	3,200.00	4,000.00	300.00
Pathologist (1st asst. gr.).....	3,200.00	4,000.00	300.00
Senior assistant physician.....	2,400.00	3,200.00	300.00
Assistant physician.....	2,000.00	2,400.00	200.00
Senior dentist.....	2,400.00	3,200.00	300.00
Dentist .....	2,000.00	2,400.00	200.00
Medical or dental interne.....	.....	1,800.00	.....
Pharmacist .....	1,200.00	1,500.00	100.00
Steward .....	3,000.00	4,000.00	300.00
Assistant steward .....	1,600.00	2,200.00	200.00
Principal, training school.....	1,500.00	1,800.00	100.00
Chief occupational therapist....	1,500.00	1,800.00	100.00
Social worker .....	1,500.00	1,800.00	100.00
Chief engineer .....	1,728.00	1,920.00	Sec. 61
Master mechanic .....	1,728.00	1,920.00	Sec. 61
Other than resident officers:			
Asst. principal, training school...	.....	\$1,200.00	.....
Occupational therapist .....	.....	1,200.00	.....
Asst. social worker .....	.....	1,200.00	.....



## NOTES

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In a recent radio talk Dr. Matthias Nicoll, Jr., State Commissioner of Health, stated that 18,000 nail accidents occur annually in New York State. Many of these result in serious infections.

The National Committee for Mental Hygiene has recently published a Monograph on "Mental Clinics: An Account of Their Development in the United States," which was prepared by Mary C. Jarrett.

The American College of Physical Therapy will hold its 1927 Clinical Congress of Physical Therapy at Hotel Sherman, Chicago, October 31 to November 5. The first three days of the Congress are to be devoted to a school of instruction. One day will be given up to sectional meetings and the final day will be devoted to joint sessions.

Dr. Horatio M. Pollock has been appointed chairman of the Committee on Statistics of the American Association for the Study of the Feeble-minded for the year 1927-1928. The other officers of the committee are: Edith M. Furbush, National Committee for Mental Hygiene, 370 7th Avenue, New York City; Dr. J. M. Murdoch, Franklin, Pa.; Dr. A. L. Beier, Chippewa Falls, Wis.; Dr. Neil A. Dayton, Department of Mental Diseases, Boston, Mass.; Dr. Fred Kuhlman, 292 Macalaster Ave., St. Paul, Minn.

Dr. John L. Van De Mark, who has been first assistant physician at the Rochester State Hospital since October 1, 1921, has been appointed medical inspector for the Department of Mental Hygiene, the appointment to become effective August 1, 1927. Dr. Van De Mark has been in the State hospital service since February 17, 1906, having served in the St. Lawrence, Central Islip and Rochester State Hospitals, and as medical examiner in the Bureau of Deportation for nearly three years and as medical inspector for over two years.

The American Association for the Study of the Feeble-minded held its annual meeting at Cincinnati, June 4-6, 1927. The principal topics discussed were the "Medical and Psychological Aspects of Mental Deficiency"; Social Service as Applied to Mental Deficiency; and Education as Related to Mental Deficiency. The following were the officers of the Association: Benjamin W. Baker, M. D., president, Laconia, N. H.; Edward R. Johnstone, Sc. M., vice-president, Vineland, N. J.; Howard W. Potter, M. D., secretary-treasurer, Thiells, N. Y.

The Committee on Arrangements for the meeting of the American Psychiatric Association that was held in New York City in 1926, has turned over to the Association a fund amounting to \$2,038.69 representing the

unexpended funds raised by the committee to pay the expenses of the meeting. The association will hold the money as a fund and use the income therefrom for defraying expenses incurred in holding future annual meetings.

The recent civil service examinations for assistant commissioner in the New York State Department of Mental Hygiene resulted in the establishment of the following lists:

Assistant Commissioner, Division of Prevention; Dr. William C. Sandy, Dr. Harry A. Steckel, Dr. Philip Smith.

Assistant Commissioner, Division of Mental Diseases; Dr. Clarence O. Cheney, Dr. William C. Sandy, Dr. John L. Van De Mark, Dr. George W. T. Mills, Dr. Arthur P. Noyes, Dr. Isaac J. Furman, Dr. Joseph W. Moore, Dr. David Corcoran, Dr. John A. Pritchard.

The American Prison Association will hold its next annual meeting at Tacoma, Washington, August 12-18, 1927. A very attractive itinerary has been arranged with the Pennsylvania Railroad for the members of this Association who will attend the meeting.

The Statistical Bulletin of the Metropolitan Life Insurance Company for May, 1927, contains a most gratifying item relative to the decline in the death rate of tuberculosis during the first three months of 1927. Among the policy holders of the white race, the death rate for this quarter computed on an annual basis was only 70.9 per hundred thousand. Sixteen years ago, in 1911, the rate was about three times as high. As the rate has been steadily declining for several years the outlook for the future is very promising. Dr. L. I. Dublin predicts that the mortality rate from tuberculosis will drop to about 50 per 100,000 by 1930. To achieve this result, he states that it will be necessary that the present era of prosperity continue with full employment and high wages for the workers of the country and that the efficient preventive and educational work of public and private health agencies be maintained at a high level.

The publication in June of certain details of the legacies left by the late Payne Whitney of New York proved to be of much interest to hospital and charitable circles. It was estimated that Mr. Whitney's estate would reach the stupendous total of \$100,000,000 and as he had been specially interested in hospital work during his lifetime it seemed only natural that he would provide for the continuance of such support from his estate. Such proved to be the case.

Beginning in 1916 Mr. Whitney's annual contributions to the Society of the New York Hospital and its branches (among them Bloomingdale Hospital for the insane), ranged from \$5,500 to \$100,000. Other notable contributions to the hospital during this period were: One from Mr. James

Buchanan Brady in the sum of \$676,777; one from George F. Baker, amounting to \$500,000; one from Kate S. Richardson, in the sum of \$550,198; one from Henry R. Taylor, in the sum of \$150,000, and many others of goodly dimensions.

Mr. Whitney in his will divided his holdings into 300 shares, 22 of which were left outright to the New York Hospital. Eleven additional shares are left to the Society of the New York Hospital to be specially devoted to psychiatric and neurological developments in New York City. In addition, 46 shares were set aside to be used by the administrators of his will at their discretion, preferably for the further use of the organizations already mentioned in his will.

New York Hospital was established in the reign of King George on June 13, 1771, by Royal authority and its largest branch is the Bloomingdale Hospital now located at White Plains with accommodations for 350 patients. The expenditures of the hospital for maintenance of patients during the last year were \$801,948.42.

Bloomingdale Hospital is under the superintendency of Dr. Mortimer W. Raynor, for many years in the medical service of the State Hospital system, and, for some time superintendent of the Kings Park State Hospital.

Dr. Abraham Zingher, assistant director of the Bureau of Laboratories of the New York City Department of Health, was found dead at his laboratory bench late at night June 4. A gas tube to a Bunsen burner was found disconnected nearby. A notebook lying open on the bench indicated that Dr. Zingher had been overcome by the gas fumes while at work.

Dr. Zingher, a graduate of Cornell University Medical College, class of 1908, joined the staff of the city research laboratories in 1913 and was appointed assistant professor of hygiene in Bellevue Medical College in 1916. Later he was appointed pediatricist at the Post Graduate Hospital. He did notable work with Dr. Park, director of the city research laboratories, in demonstrating the reliability of the Schick test and the efficacy of toxin-antitoxin. More recently he had been working on the Dick toxin in an endeavor to obtain a longer period of immunization against scarlet fever.

Since July 1, 1926, the number of insane patients on the books of the civil State hospital of New York State has increased by 1,891, whereas the average annual increase for the previous 16 years was 899. In 1926 the increase was 818. The largest previous increase was 1,442 in 1921. "We have no explanation for it," Dr. Frederick W. Parsons, Commissioner of Mental Hygiene, said, when making the figures public. "Further study of

the figures may reveal one. The insanity increase is **general** and includes all forms of mental disease. It affects all ages and both sexes. There have been no epidemics of disease and there has been no unusual variation in the death rate. There has been no economic depression and there has been no period of **great** national excitement. It cannot be said now that the increase is due to prohibition for there does not seem to be any unusual increase in alcoholic psychoses, compared with recent years."

## NOTE ON YEAST THERAPY

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Yeast, known botanically as *saccharomyces cerivisæ* is a simple microscopic plant, belonging to the mushroom family and reproduces itself by budding.

Fleischmann's Yeast is a special strain of *saccharomyces cerivisæ*, selected and cultivated to develop hardiness, high vitamin content and strong enzymatic power. It is grown under strict scientific control and each cake of Fleischmann's Yeast consists of millions of these tiny plants pressed together.

The use of yeast as a curative agent is now new. While several references to its use are found in the old literature the first real scientific investigation was made by Moses in England and reported in the London Lancet in 1852. Since that time, the literature of all countries contains considerable information.

About 1917 a number of investigations were carried out by several well-known physicians; and this research work under grants by the Fleischmann Company has been continued in various hospitals and colleges to date, and in fact is still going on.

Besides the above investigations, the Fleischmann Company had very thorough tests made in some physiological laboratories, where large quantities of yeast were eaten by the staff for a considerable period of time, and thorough tests showed it to be absolutely harmless.

While the chief value of yeast is in the treatment of constipation, it is also almost a specific for boils. It stimulates the appetite and corrects many of the milder gastro-intestinal disturbances. Although it is the richest available source of Vitamin B., it should not be thought that yeast is recommended solely for its vitamin content. It is due to its other properties mentioned above, that yeast is so valuable.

While it is recognized, that many cases of constipation are relieved by regular exercise, proper food, etc., the addition of yeast is really a part of the dietary treatment, and it is particularly valuable in cases that do not yield to simple measures. It is not in any sense a cathartic, and its action in producing regular elimination of waste, requires several weeks' treatment. But when normal elimination is finally established, it is usually permanent. In other words, yeast is in no sense habit-forming.